ZERO TO THREE®

May 2014 Volume 34 No. 5

Journal of ZERO TO THREE: National Center for Infants, Toddlers, and Families

Addressing Maternal Depression in Home Visiting Programs:

Current Issues and Innovative Approaches

THIS ISSUE AND WHY IT MATTERS

With the expansion of home visiting through the Maternal, Infant, and Early Childhood Home Visiting Program (MIECHV), much attention has focused on how to make home visiting programs more effective. Helping depressed mothers in home visiting has emerged as a promising way to enhance outcomes and improve the lives of families served by these programs. Depression is a devastating condition that results in considerable human and economic costs. Depressed mothers struggle to parent effectively. Their children are at great risk to develop problems in emotional, cognitive, and social domains. Up to one half of mothers in home visiting experience clinically significant levels of depression during their participation in services. The symptoms of depression—low energy, sadness, sleep problems, and poor memory to name a few—make it difficult for mothers to fully engage in and benefit from home visiting. Unfortunately, most depressed mothers in home visiting do not receive effective treatment. Treatment in the community is typically difficult to access. Availability of evidence-based interventions is often lacking, and capacity is limited in many areas. Effective prevention and treatment options are needed that are specifically designed for mothers in home visiting. Such efforts can change the lives of depressed mothers and their children for the better and optimize outcomes in home visiting programs.

This issue of *Zero to Three* presents a series of articles on maternal depression in home visiting. In addition to thoughtful reviews of important topics involving maternal depression and home visiting, several articles present innovative approaches to prevention and treatment. Together, they capture the exciting and important work that is being done in this area. The first article synthesizes the research on the impact of maternal depression on children, documenting how depression affects growth and development. Much is known about how depression alters maternal life course and emerging child capabilities. Promising approaches to intervention are considered and the appeal of home visiting as an important setting to reach depressed mothers is highlighted. The next article considers universal screening for depression. With the MIECHV Program, home visiting programs are regularly screening mothers for depression. Challenges associated with screening are discussed, and components of effective screening are presented. Four articles on promising treatment and prevention strategies follow. These include (a) an adapted form of cognitive behavioral therapy that is highly integrated into ongoing home visiting, (b) an approach to facilitate referral and linkage of depressed mothers to mental health resources in the community, (c) an adaptation of interpersonal psychotherapy that has been enhanced with a component on parenting, and (d) a prevention program using cognitive behavioral strategies that has been adapted for mothers in home visiting.

Together, these initiatives hold considerable promise and are accruing an impressive body of empirical evidence. Each takes advantage of home visiting to identify, engage, and support depressed mothers. They confirm that nontraditional settings such as home visiting are excellent sites to reach and help depressed mothers who might otherwise go undetected and untreated. The next article examines the moderating effect of maternal depression on home visiting outcomes. This is a complex literature, and the authors are thorough and careful in drawing conclusions and offering guidance for continued work in this area. Finally, the issue ends with an examination of the costs and benefits of treating maternal depression. This, too, is an emerging area of inquiry, and preliminary conclusions are presented along with suggestions for future research and economic analyses of this important topic.

Robert T. Ammerman, Guest Editor
Scientific Director, Every Child Succeeds
Professor of Pediatrics, Cincinnati Children's Hospital Medical Center

Stefanie Powers, Editor

ZERO TO THREE®
National Center for Infants, Toddlers, and Families

Founded in 1980

Sally Provence, Editor 1980 –1985
Jeree Pawl, Editor 1985–1992
Emily Fenichel, Editor 1992–2006

Editor
Stefanie Powers

Director of Production
Jennifer Moon Li

Design Consultant
Heroun + Co.

Production
K Art and Design, Inc.

Executive Director
Matthew E. Melmed

Contents

May 2014 Volume 34 No. 5

Addressing Maternal Depression in Home Visiting Programs: *Current Issues and Innovative Approaches*

Also in This Issue:

Cover photo: © iStockphoto.com/graytown

www.zerotothree.org/journal

Zero to Three is the bimonthly journal of ZERO TO THREE: National Center For Infants, Toddlers, and Families. **ISSN 0736-8038** 1255 23rd Street, NW, Suite 350, Washington, DC 20037, (202) 638-1144; *Customer Service:* 1-800-899-4301

The Impact of Depression on Mothers and Children

WILLIAM R. BEARDSLEE
Boston Children's Hospital
Boston, Massachusetts

TRACY R. G. GLADSTONE
Wellesley Centers for Women
Wellesley College

ANNE DIEHL
Boston Children's Hospital
Boston, Massachusetts

Maternal depression, including perinatal and postpartum depression, as well as depression in mothers of toddlers, is quite common. Depression is present in an estimated 10%–20% of mothers in the postpartum period (National Institute for Health Care Management [NIHCM] Foundation, 2010), and an estimated 17%–24% of mothers of toddlers (McLennan, Kotelchuck, & Cho, 2001), disproportionally affecting low-income mothers (Vericker, Macomber, & Golden, 2010). However, misconceptions about maternal depression continue to circulate—in particular, the belief that depression in pregnant women and mothers of young children does not constitute a valid illness and that feelings of sadness go away with time. Maternal depression is real and prevalent, and it represents a significant public health concern.

Depression as a diagnosis in the *Diagnostic and Statistical Manual of Mental Disorders V* (American Psychiatric Association [APA], 2013) is a mood disorder that causes significant interpersonal and functional impairment. It is, in fact, the second leading cause of disability worldwide in women of child-bearing age, after HIV/AIDS (World Health Organization, 2001). Different terms, such as *perinatal* and *postpartum* depression, describe depression that occurs in pregnant women and mothers of infants and toddlers. These terms denote when the depression takes place, but they are not separate diagnoses. To be diagnosed with *major depressive disorder*, a mother must experience at least 2 weeks of low mood or loss of interest in enjoyable activities. She must also experience at least four of nine additional symptoms that include sleeping too little or too much, significant unintentional change in weight, loss of energy, feelings of worthlessness, decreased concentration, and recurrent thoughts of death (APA, 2013). Mothers experiencing postpartum depression may also experience unusual thoughts or fears, such as obsessive concerns about harm to the baby, or may experience a lack of interest in the baby and poor bonding with the child, but these are not diagnostic symptoms (NIHCM Foundation, 2010). Many women also experience symptoms of depression that are

Abstract

Depression in pregnant women and mothers of very young children is a pressing public health issue. Maternal depression is linked to a number of serious difficulties for mothers, their young children, and mother–child relationships. Unrecognized and untreated, it can lead to long-lasting impairment for both mothers and their children. However, these negative outcomes are not inevitable, and studies of treatment and coordination with services that mothers receive, such as home visiting, are encouraging. With proper maternal and family intervention—emphasizing resiliency, social connection, and enhanced parenting skills—the negative impact of maternal depression can be significantly reduced and developmental outcomes for these children significantly enhanced.

impairing but do not meet the full diagnostic threshold. These are also of concern and should be assessed, as often the presence of a number of symptoms alone can affect both mother and child. There are certain observable traits in women who might have depression or depressive symptoms (See box Recognizing Maternal Depression: Signs to Look For).

The best way to understand maternal depression is to place it in a broader developmental transactional framework that recognizes the importance of genes and biology, past experience, and current circumstances. The mother's moods and behaviors influence the infant, and the infant correspondingly influences the mother. The outcomes—the mother's health, the infant's health, or the nature of their interactions, at any particular stage can be viewed as the balance of risk and protective factors over time. Preventive intervention strategies such as home visiting aim to shift the balance between risk and protective factors by increasing protective factors, such as social support and social connectedness.

As with other disorders, depression has associated factors that increase the risk of developing the disorder (i.e., *risk factors*; see box Risk Factors for Maternal Depression). Risk factors can be specific, in that they increase the risk of developing depression, or they can be nonspecific, meaning they increase the risk of a number of mental health disorders, including depression. Specific risk factors for maternal depression can include biological factors, such as a history of mood disorder (e.g., depression, bipolar disorder, seasonal affective disorder), substance abuse problems, anxiety symptoms, maternal depression from a previous pregnancy, and family history of depression (Muñoz, Beardslee, & Leykin, 2012; NIHCM Foundation, 2010). Risk factors also can be ecological, or related to the context in which the person lives. For example, unplanned or unwanted pregnancy, adolescent motherhood, parenting or marital difficulties or both, low socioeconomic status, financial strain, and lack of social support or a community network are all ecological risk factors for maternal depression (NIHCM Foundation, 2010). Ecological factors such as exposure to violence, poverty, social isolation, and life stressors are also nonspecific risk factors (Beardslee, Gladstone, & O'Connor, 2012). Certain ecological factors are particularly salient in increasing risk of depression in mothers. Poverty is a significant risk factor, and studies have found rates of depression in low-income mothers of young children to be upward of 50% (Knitzer, Theberge, & Johnson, 2008; Yoshikawa, Aber, & Beardslee, 2012). Forty-one percent of low-income mothers, specifically of infants, have some form of depression. Eleven percent of low-income mothers of infants have depression that is severe (Lowenstein, Goldman, Emam, & McDaniel, 2013). Relative to higher-income mothers, low-income mothers are more likely to experience more severe depression (Lowenstein et al., 2013). Of particular concern is depression among homeless women (Bassuk & Beardslee, 2014). Other risk factors for depression, such as exposure to violence and social isolation, are associated with poverty, and they interact to increase the risk of depression in low-income mothers (National Research Council & Institute of Medicine, 2009a).

In addition, it can be very difficult for low-income mothers to receive the services they need. One in three depressed low-income mothers report receiving no treatment for depression; low-income women are particularly less likely to receive treatment when uninsured (Lowenstein et al., 2013). Given the high rates of depression in mothers affected by poverty, and the additional challenges such mothers face (e.g., stressful life events, social isolation, increased family conflict, and financial strain; Center on the Developing Child at Harvard University, 2009), particular attention in addressing the needs of low-income depressed mothers is warranted.

In contrast to risk factors, certain beneficial characteristics (protective factors) may help buffer women against the risk of developing depression. In general, strong social connections and specific life, coping, and social skills, among others, are considered protective factors for depression. Social support and self-esteem have been demonstrated to be protective against depression in low-income women during pregnancy (Jesse, Walcott-McQuigg, Mariella, & Swanson, 2005). Additional protective factors have been identified that are specific to maternal depression. For example, instrumental support (availability of someone to help with child care or to lend money during a crisis), education above the high school level, and availability of help with transportation have all been associated with decreased risk of depression in low-income African American mothers (Siefert, Williams, Finlayson, Delva, & Ismail, 2007).

Recognizing Maternal Depression: Signs to Look For

Moods: observable sadness, irritability, anger, and/or tearfulness

Feelings: exhausted, forgetful, disorganized, sad, irritable, hopeless, "empty," or "numb"

Behaviors: forgetting, sleeping more or less than usual, eating more or less than usual, risk-taking behaviors, isolation, yelling or crying easily, not being able to complete daily activities (e.g., shopping, showering, cleaning, cooking, doing hair, getting kids ready for their day), not enjoying activities that used to be enjoyable

Thoughts: pessimism, worthlessness, difficulty making decisions

(Adapted from Avery, Beardslee, Ayoub, & Watts, 2008)

Risk Factors for Maternal Depression

- Personal history of depression, bipolar disorder, or another mental illness
- Family history of depression, bipolar disorder, or another mental illness
- Anxiety
- Substance abuse
- Maternal depression from a previous pregnancy
- Young age (higher risk in adolescent mothers)
- Stressful life events
- Lack of social support
- Financial or marital stress

Photo: ©iStockphoto.com/Mark Bowden

The mother's moods and behaviors influence the infant, and the infant correspondingly influences the mother.

PHOTO: ©ISTOCKPHOTO.COM/MONKEYBUSINESSIMAGES

Routines provide infants and toddlers with a sense of predictability that builds in them a sense of security and emotional stability

Untreated Maternal Depression and Its Outcomes

When untreated with effective intervention, maternal depression can result in a number of negative outcomes for the mother, her young child, and the relationship between them. Maternal depression is associated with functional limitations, including difficulty with parenting (Goodman & Gotlib, 2002), as well as poor maternal health, including increased risk of substance abuse and suicide (NIHCM Foundation, 2010). Maternal depression also interferes with a mother's ability to work. Outcomes related to child physical, mental, and emotional development are quite concerning: Infants and toddlers of depressed mothers have lower rates of vaccination and pediatric check-ups and are more likely to ride in improperly used car seats (McLennan & Kotelchuck, 2000; Minkovitz et al., 2005). Infants of depressed mothers have lower average birth weights and poorer mental, motor, and emotional development (Downey & Coyne, 1990). Toddlers of depressed mothers have more emotional and behavioral problems and lower scores of mental ability (Canadian Paediatric Society, 2004). These impairments can have long-lasting consequences. School-aged and adolescent children of depressed mothers are at an increased risk for developing psychiatric disorders and experiencing social and academic impairments (Canadian Paediatric Society, 2004). Another study found that depression during pregnancy significantly increased the likelihood of children developing depression at 18 years old, regardless of whether or not the mother experienced depression at any time after pregnancy (i.e., during her child's life; Pearson et al., 2013).

Maternal depression can also seriously impact the mother–child relationship, and impaired mother–child relationships can affect child mental and emotional development (Goodman & Gotlib, 2002). Depressed mothers of young children tend to be less responsive to child needs and interact less with the child, and they are more likely to withdraw from the child or intrude on child behavior out of irritation (National Research Council & Institute of Medicine, 2000). Withdrawal from a child can directly affect the child's well-being. Because of periods of sadness and low energy, depression can make it difficult for mothers to maintain routines; and very young children depend on the consistency of routines. Routines provide infants and toddlers with a sense of predictability that builds in them a sense of security and emotional stability. When routines are maintained and children know what to expect and what is expected of them, children can also learn responsibility and self-control, and they can have an easier time transitioning between activities. When mothers are unable to maintain routines because of the challenges of living with depression, children may experience stress (Fiese, Rhodes, & Beardslee, 2013).

Beyond routines, when a mother is withdrawn or inconsistent because of depression, the child learns that his mother is not always physically or emotionally available to provide for his needs, safety, and autonomy. Some infants in these circumstances form emotional attachments to their mothers, but these attachments are said to not be "secure." In the *secure attachment* bond, the child feels sufficiently safe and confident to explore the world around him, knowing that his mother is there to provide comfort and to protect him from danger. Secure attachment is important to child mental and emotional development, because a child who feels safe and supported to crawl and explore can build basic knowledge about the world and develop a sense of autonomy, both of which form critical connections in the developing brain. Children who are not securely attached to their mothers do not feel as comfortable leaving their mother's side, and by restricting their movement receive less mental stimulation than babies who explore freely (National Research Council & Institute of Medicine, 2000).

Secure attachment is also important for stress management (National Research Council & Institute of Medicine, 2000). When parenting is impaired by depression and children do not form secure attachments to their mothers, this is because experience has taught them that their emotional and physical needs cannot be met reliably. Because their well-being and safety are uncertain, these children experience an elevated level of continuous stress, which not only affects the young child's emotional well-being as an infant or toddler, but also impacts future well-being. Research has indicated that these patterns of increased anxiety in infants and toddlers of depressed mothers permanently alter how the brains of these children respond to stress (Center on the Developing Child at Harvard University, 2009).

The parenting and mother–child relationship difficulties of depressed mothers are thought to explain, at least partially, some of the mental, emotional, and social difficulties found in children whose mothers were depressed during their infancy and toddlerhood (Goodman & Gotlib, 2002). The interaction of maternal depression and poverty may also account for some of the association between maternal depression and poor child outcomes. Difficulties in mother–child interactions are higher in disadvantaged mothers (Peterson & Albers, 2001). This may be due to additional challenges low-income depressed mothers may experience (e.g., financial stress, isolation, increased family conflict, and stressful life events) that make functioning with and addressing depression more difficult in this population (Center on the Developing Child at Harvard University, 2009).

Addressing Maternal Depression

The outcomes of untreated maternal depression are quite serious, but with proper identification and treatment, risk of these outcomes can be substantially decreased.

Assessment

Studies have suggested very low rates (8%–32%) of screening for maternal depression with validated screeners in obstetric and pediatric practices (NIHCM Foundation, 2010), representing a tremendous lost opportunity to identify mothers with depressive symptoms. Public health officials have advocated for incorporating depression screening into prenatal and infant medical checkups, because studies indicated that screening mothers in such settings is an effective method for identifying maternal depression (Lowenstein et al., 2013).

Those working on the front lines with depressed young mothers (e.g., in Head Start, primary care, or food stamp offices) must consider that women will present with symptoms of depression, and one of their key tasks is to decide at what point to seek a referral. The first step of assessment is to ask how

the mother is feeling, how things are going, and how she is behaving. Changes in mood and energy characterize depression. With knowledge of the number of symptoms and the degree of impairment, a decision about whether to refer or not can then be made. Three recent publications provide specific guidance about how to inquire about the symptoms of depression and when to consider a referral. The Substance Abuse and Mental Health Services Administration has provided "Depression in Mothers: More Than the Blues" (Substance Abuse and Mental Health Services Administration, in press), and The National Center on Parent, Family and Community Engagement for the Office of Head Start has provided "Family Well-Being: A Focus on Parental Depression" (Bartlet, Ayoub, & Beardslee, 2013). These guides, as well as the Family Connections materials developed for use in Head Start (see Learn More box), are important resources.

Depression often interferes with a parent's ability to take advantage of available supports. Additional outreach and engagement for depressed mothers are recommended to accompany standard interventions such as Head Start to connect identified depressed mothers to care (Beardslee, Ayoub, Avery, Watts, & O'Carroll, 2010; Vericker et al., 2010), as well as to encourage mothers who have difficulty following through with referrals (NIHCM Foundation, 2010). The Affordable Care Act may provide another support; it has heretofore often been difficult for mothers of young children to obtain insurance coverage, but this should now change. A report from the Urban Institute suggested several different strategies for obtaining payment for treatment of mothers with young children (Howell, Golden, & Beardslee, 2013).

Photo: ©iStockphoto.com/metinkiyak

The first step in improving outcomes for children and mothers affected by maternal depression is to identify when mothers are depressed.

Treatment

Once referred to care, depressed mothers have different efficacious treatment options to consider. Antidepressant medications can be prescribed for depressed mothers. There is currently incomplete research on the safety of taking newer antidepressants while pregnant or nursing; some studies indicated no increased risk of fetal malformation with certain medications, and other studies indicated potential adverse affects on fetal and infant mental development with specific medications (Gentile, 2005). Doctors are advised to not prescribe medication to pregnant or nursing women as a first-line option, but to consider that, given the risks to a child exposed to maternal depression, it may be safer for the fetus or nursing infant for the mother to be prescribed or to continue taking medication in certain cases (Gentile, 2005). Rather than make an overall recommendation for all patients, a woman and her doctor should carefully consider the decision based on individual factors.

Two methods of psychotherapy, interpersonal therapy (IPT) and group-delivered cognitive behavioral therapy (CBT), have been demonstrated to significantly reduce depressive symptoms in women with postpartum depression who were not taking medication (Dimidjian & Goodman, 2009). IPT aims to reduce depressive symptoms associated with interpersonal difficulties by helping the patient to work through areas such as interpersonal disputes, role transitions, and grief (O'Hara, Stuart, Gorman, & Wenzel, 2000). Group-delivered CBT teaches patients specific skills to challenge problematic beliefs and behaviors related to depression (Dimidjian & Goodman, 2009). The combination of home visitation and treatment described elsewhere in this issue provides an example of coordinating effective treatment with a family-centered approach (Ammerman, Putnam, Teeters, & Van Ginkel, this issue, p. 20; Beeber et al., this issue p. 35; Perry, Tandon, Edwards, & Mendelson, this issue, p. 45).

IPT is designed to alleviate depressive symptoms by improving patients' interactions with individuals and working with them through the challenges of role transitions. Its approach is particularly appropriate for pregnant women and women of young children, because being pregnant and having a child are tremendous role adjustments that can create difficult feelings for the mother and conflict with family members. Working through these challenges that are known to increase depressive symptoms can create clinically significant changes in the mother's depression (O'Hara et al., 2000). Beeber et al. (this issue, p. 35) describe the implementation of IPT in depressed mothers in Early Head Start home visiting programs.

Depression is associated with certain thinking and behavior patterns, such as pessimistic thinking and avoidance. In CBT, patients are taught how to decrease their depressive symptoms by challenging this problematic thinking, increasing positive activities, and solving life problems. CBT can be delivered individually or in group settings, which can provide the added benefit of social support. CBT has been extensively studied across multiple contexts and has consistently demonstrated efficacy in treating depression. A study with depressed mothers that evaluated a group-delivered CBT program that also included parenting education, support, and relaxation techniques, found group-delivered CBT to be effective in reducing maternal depressive symptoms (Meager & Milgrom, 1996). Both Ammerman et al. (this issue, p. 20) and Perry et al. (this issue, p. 45) describe approaches to treatment and prevention of maternal depression in the context of home visiting that use cognitive behavioral techniques.

It is important to note that treatments for depression can be effective for minority women. When properly adapted, studies show the same outcomes as for majority-culture women (Schraufnagel, Wagner, Miranda, & Roy-Byrne, 2006).

Key Principles of Prevention

- Addressing the needs of children in families where parents are depressed.
- Strengthening parenting through psychoeducation or more complex parenting interventions.
- Providing treatment to parents when they have full-blown episodes of depression.
- Assessing children to understand their needs.
- Using a variety of preventive and therapeutic strategies to assist children.

(Bassuk & Beardslee, 2014)

Improving Child Outcomes With Intervention

Treatment of maternal depression is absolutely essential to improving family health. However, evidence suggests that maternal treatment alone may not be sufficient to improve child outcomes and that additional interventions to improve parenting behaviors, the parent–child relationship, or both are needed (Center on the Developing Child at Harvard University, 2009; Lyons-Ruth, Wolfe, & Lyubchik, 2000).The combination of treatment and other important services such as home visiting or mother–infant psychotherapy can have a beneficial effect for the mother and child. Two reports from the Institute of Medicine focused on the importance of prevention for families, one dealing primarily with preventing mental illness and problem behaviors and the other specifically with parental depression (National Research Council & Institute of Medicine, 2009a, 2009b). In both, a combination of treatment for the parent and a focus on parenting and connecting with the child was the main principle (see box Key Principles of Prevention), and this remains the best overall approach.

Mother–infant psychotherapy programs (Johnson, Dowling, & Wesner, 1980; Toth, Rogosch, Manly, & Cicchetti, 2006) are designed to improve outcomes for mothers and children. Helping mothers to process negative past experiences and coaching mothers as they interact with their children increase the mother's self-confidence and parenting skills, such as being attentive and responsive to child needs, and increase mother–child bonding. Participation in such interventions has been associated with improved cognition, emotional regulation, and maternal attachment in children, and decreased depressive symptoms and increased parental competence and satisfaction in mothers (Cohen et al., 1999).

Home visitation presents an opportunity to identify depression in pregnant women and new mothers, as well as to provide parenting support and education and to connect mothers to needed services (Golden, Hawkins, & Beardslee, 2011). Traditional home visits may not be effective in alleviating the problems of depressed mothers (Vericker et al., 2010), but if adapted to specifically address the barriers depressed mothers face in tending to their children, this point of intervention can be effectively leveraged to provide salient guidance and support. For example, a study of a home visitation program designed to increase positive mother–child interactions and social support in depressed low-income mothers found that infants of participating mothers had higher mental development scores than infants of nonparticipating mothers (Lyons-Ruth, Connell, Grunebaum, & Botein, 1990).

The Importance of Resilience

The concept of resilience receives particular emphasis within the depression treatment and prevention literature. *Resilience* is the ability to "bounce back" from adversity. It

Encouraging Resiliency

For parents:

- Provide social support.
- Connect to support services and interventions.
- Support the parent's resilience by encouraging them to
  - —Make and maintain social connections.
  - —Keep things in perspective.
  - —Maintain a positive outlook.
  - —Support a positive self-view.
  - —Work on realistic, manageable goals.
  - —Take care of one's self.

For children:

- Support parents in building caring relationships with their children, being a positive role model.
- Help teach child self-regulation skills.
- Help child build self-confidence, thinking skills, and a positive outlook.
- Encourage child's relationships with peers, teachers, and parents.
- Encourage responsibility and participation in activities.
- Teach children how to reach out/ ask for help.

(Adapted from American Psychological Association, 2014; Beardslee et al. 2010; Best Start Resource Centre, 2012)

has been observed that two individuals can experience the same stressful event, and one may experience persistent problems, whereas the other might have initial difficulties but eventually returns to a state of wellness. What differs between these individuals is their ability to be resilient. The resilience framework provides a useful orientation to thinking broadly about working with depressed parents. Characteristics of resilience include motivation for achievement, positive outlook, normal cognitive development, positive family systems, self-regulation skills, positive relationships, personal importance of religious faith, and participation in activities (Beardslee et al., 2012; Miller, Warner, Wickramaratne, & Weissman, 1997). Factors such as self-regulation skills, involvement in activities, and social support are not innate characteristics, but factors that can be improved. One's resilience can be increased by modifying concrete skills and resources, which makes it a potent target for intervention.

Efforts to enhance resiliency can be devised according to different contexts of support. At the individual level, resilience may be observed in people who have a sense of personal competence, social connections, and other personal strengths (for tips on increasing resilience in parents and children, see box Encouraging Resiliency). At the family level, resilience may be characterized by a deep commitment to parenting despite difficulties such as depression, as well as by openness of communication, particularly around the role of depression in the family. At the service provider level, institutions, such as schools and health centers, can encourage resilience if they provide quality health care and supportive services for families. At the societal level, resilience can be supported by government policy, such as policies to provide medical coverage to low-income families, to extend family leave after childbirth, or to provide subsidized child care.

Family Connections, an intervention to increase resilience at the service provider level, educates Head Start/Early Head Start professionals in supporting resilience in low-income mothers who are depressed or facing other adversities, by teaching these mothers skills to cope and parent effectively with depression, and encouraging them to build supportive relationships and increase positive communication. Programs such as Family Connections not only can improve outcomes for mothers, but also may have preventive effects for children. Resilience can be improved through simple social support programs as well. For example, one study found that a low-cost peer support intervention, consisting of five 30-minute phone calls by a woman who had experienced postpartum depression previously, significantly improved depressive symptoms in postpartum women (Dennis, 2003).

Conclusion

Maternal depression is a serious public health issue, one that should be considered in a broad ecological context. It occurs because of a combination of specific and nonspecific risk factors, and attention to both is warranted. The health care system—the mental health care system in particular—must be attuned to the recognition and treatment of maternal depression, especially among young mothers who have not been serviced by the usual mental health agencies. Innovations in how best to reach these families are needed, and

Learn More

Online Resources

Best Start—Building Resilience in Young Children
www.beststart.org/resources/hlthy_chld_dev/pdf/BSRC_Resilience_English_fnl.pdf

Center on the Developing Child at Harvard University
http://developingchild.harvard.edu/

Family Connections at Boston Children's Hospital
www.childrenshospital.org/clinician-resources/family-connections

Family Connections Materials: A Comprehensive Approach in Dealing With Parental Depression and Related Adversities.
http://eclkc.ohs.acf.hhs.gov/hslc/tta-system/ehsnrc/Early%20Head%20Start/health-safety-nutrition/health/FamilyConnection.htm#ShortPapersforStaff

The Children's Defense Fund Minnesota ZERO TO THREE Research to Policy Project
www.cdf-mn.org/research-library/maternal-depression-report.pdf

Maternal and Child Health, Health Resources and Services Administration
http://mchb.hrsa.gov/pregnancyandbeyond/depression/index.html

Office of Women's Health, U.S. Department of Health and Human Services
www.womenshealth.gov/publications/our-publications/fact-sheet/depression-pregnancy.html

Postpartum Support International
www.postpartum.net

The Road to Resilience (American Psychological Association)
www.apa.org/helpcenter/road-resilience.aspx

Linking Depressed Mothers to Effective Services (Urban Institute)
www.urban.org/depressed-mothers-effective-services.cfm

Article

Preventing Conduct Problems in Head Start Children: Strengthening Parenting Competencies
C. Webster-Stratton (1998) Journal of Consulting and Clinical Psychology, *66, 715–730*

other articles in this issue describe some of these approaches. Depressed mothers and their families will benefit from a network of services that is family-oriented, evidence-based, and accessible at multiple entry points, and that is grounded in natural supports, thoughtfully financed, and aligned with the goals of service departments (Lowenstein et al., 2013). Both Institute of Medicine reports (National Research Council & Institute of Medicine, 2009a, 2009b) emphasized the need for infrastructure to support the delivery of preventive interventions, appropriate funding structures, and a capable work force. This article underscores those concerns while indicating the promise of addressing them. When depressed mothers receive treatment and support, negative maternal and child outcomes can be significantly reduced.

William R. Beardslee, *MD, is the Gardner-Monks Professor of Child Psychiatry at Harvard Medical School, and director of The Baer Prevention Initiatives, Department of Psychiatry, Boston Children's Hospital. Dr. Beardslee is a child psychiatrist with more than 30 years of experience working with families that have faced depression and related adversities. He is particularly interested in resilience in the face of emotional adversity and has studied civil rights workers, survivors of cancer, and children of depressed parents. He has developed, evaluated, and helped disseminate several widely used preventive interventions for families facing depression.*

Tracy R. G. Gladstone, *PhD, is the inaugural director of the Robert S. and Grace W. Stone Primary Prevention Initiatives at the Wellesley Centers for Women at Wellesley College, an assistant in psychology at Boston Children's Hospital, an instructor at Harvard Medical School, and a research scientist at the Judge Baker Children's Center. She has served as a senior member of the Preventive Intervention Project research team, and is a co-principal investigator on a federally funded, multisite study of an Internet-based cognitive-behavioral intervention program for adolescents at risk for depression. Dr. Gladstone's research interests include the prevention of depression in adolescents, the role of sibling relationships, and the treatment of depression in Ethiopian women with obstetric fistula.*

Anne Diehl *is a research assistant under Dr. Beardslee and Dr. Gladstone in the Department of Psychiatry at Boston Children's Hospital.*

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: Author.

American Psychological Association. (2014). *The road to resilience.* Retrieved from www.apa.org/helpcenter/road-resilience.aspx

Ammerman, R. T., Putnam, F. W., Teeters, A. R., & Van Ginkel, J. B. (2014). Moving Beyond Depression: A collaborative approach to treating depressed mothers in home visiting programs. *Zero to Three, 34*(5), 20–27.

Avery, M. W., Beardslee, W. R., Ayoub, C. C., & Watts, C. L. (2008). *Parenting, depression, and hope: Reaching out to families facing adversity.* Retrieved from http://eclkc.ohs.acf.hhs.gov/hslc/tta-system/health/docs/parentingdepression.pdf

Bartlet, J. D., Ayoub, C., & Beardslee, W. (2013). *Family well-being: A focus on parental depression.* Retrieved from http://projectlaunch.promoteprevent.org/sites/default/files/beardslee_family_well-being.pdf

Bassuk, E., L., & Beardslee, W.R. (2014). Depression in homeless mothers: Addressing an unrecognized public health issue. *American Journal of Orthopsychiatry, 84*, 73–81.

Beardslee, W. R., Ayoub, C., Avery, M. W., Watts, C. L., & O'Carroll, K. L. (2010). Family Connections: An approach for strengthening early care systems in facing depression and adversity. *American Journal of Orthopsychiatry, 80*, 482–495.

Beardslee, W. R., Gladstone, T. R. G., & O'Connor, E. E. (2012). Developmental risk of depression: Experience matters. *Child and Adolescent Psychiatric Clinics of North America, 21*, 261–278.

Beeber, L. S., Schwartz, T. A., Holditch-Davis, D., Canuso, R., Lewis, V., & Matsuda, Y. (2014). Interpersonal psychotherapy with a parenting enhancement adapted for in-home delivery in Early Head Start. *Zero to Three, 34*(5), 35–44.

Best Start Resource Centre. (2012). *Building resilience in young children.* Retrieved from www.beststart.org/resources/hlthy_chld_dev/pdf/BSRC_Resilience_English_fnl.pdf

Canadian Paediatric Society. (2004). *Maternal depression and child development.* Retrieved from www.cps.ca/en/documents/position/maternal-depression-child-development

Center on the Developing Child at Harvard University. (2009). *Maternal depression can undermine the development of young children* (Working paper no. 8). Retrieved from http://developingchild.harvard.edu/resources/reports_and_working_papers/working_papers/wp8

Cohen, N. J., Muir, E., Lojkasek, M., Muir, R., Parker, C. J., Barwick, M., & Brown, M. (1999). Watch, wait, and wonder: Testing the effectiveness of a new approach to mother-infant psychotherapy. *Infant Mental Health Journal, 20*, 429–451.

Dennis, C. L. (2003). The effect of peer support on postpartum depression: A pilot randomized controlled trial. *Canadian Journal of Psychiatry, 48*, 115–124.

Dimidjian, S., & Goodman, S. (2009). Non-pharmacologic intervention and prevention strategies for depression during pregnancy and the postpartum. *Clinical Obstetrics and Gynecology, 52*, 498–515.

Downey, G., & Coyne, J. C. (1990). Children of depressed parents: An integrative review. *Psychological Bulletin, 108*, 50–75.

Fiese, B. H., Rhodes, H. G., & Beardslee, W. R. (2013). Rapid changes in American family life: Consequences for child health and pediatric practice. *Pediatrics, 132*, 552–559.

Gentile, S. (2005). The safety of newer antidepressants in pregnancy and breastfeeding. *Drug Safety, 28*, 137–152.

Golden, O., Hawkins, A., & Beardslee, W. (2011). *Home visiting and maternal depression.* Urban Institute. Retrieved from www.urban.org/publications/412316.html

Goodman, S. H., & Gotlib, I. H. (2002). *Children of depressed parents.* Washington, DC: American Psychological Association.

Howell, E., Golden, O., & Beardslee, W. (2013). *Emerging opportunities for addressing maternal depression under Medicaid.* Urban Institute. Retrieved from www.urban.org/publications/412758.html

Jesse, D. E., Walcott-McQuigg, J., Mariella, A., & Swanson, M. S. (2005). Risks and protective factors associated with symptoms of depression in low-income African American and Caucasian women during pregnancy. *Journal of Midwifery & Women's Health, 50*, 405–410.

Johnson, F., Dowling, J., & Wesner, D. (1980). Notes on infant psychotherapy. *Infant Mental Health Journal, 1*, 19–33.

Knitzer, J., Theberge, S., & Johnson, K. (2008). Reducing maternal depression and its impact on young children: Toward a responsive early childhood framework. National Center for Children in Poverty, Project THRIVE (Issue Brief No. 2). New York City, NY: Columbia University Mailman School of Public Health.

Lowenstein, C., Golden, O., Emam, D., & McDaniel, M. (2013). *Linking depressed mothers to effective services and supports: A policy and systems agenda to enhance children's development and prevent child abuse and neglect.* Retrieved from www.urban.org/publications/412933.html

Lyons-Ruth, K., Connell, D. B., Grunebaum, H. U., & Botein, S. (1990). Infants at social risk: Maternal depression and family support services as mediators of infant development and security of attachment. *Child Development, 61*, 85–98.

Lyons-Ruth, K., Wolfe, R., & Lyubchik, A. (2000). Depression and the parenting of young children: Making the case for early preventive mental

health services. *Harvard Review of Psychiatry, 8*, 148–153.

McLennan, J. D., & Kotelchuck, M. (2000). Parental prevention practices for young children in the context of maternal depression. *Pediatrics, 105*, 1090–1095.

McLennan, J. D., Kotelchuck, M., & Cho, H. (2001). Prevalence, persistence, and correlates of depressive symptoms in a national sample of mothers of toddlers. *Journal of the American Academy of Child & Adolescent Psychiatry, 40*, 1316–1323.

Meager, I., & Milgrom, J. (1996). Group treatment for postpartum depression: A pilot study. *Australasian Psychiatry, 30*, 852–860.

Miller, L., Warner, V., Wickramaratne, P., & Weissman, M. (1997). Religiosity and depression: Ten-year follow-up of depressed mothers and offspring. *Journal of the American Academy of Child & Adolescent Psychiatry, 36*, 1416–1425.

Minkovitz, C. S., Strobino, D., Scharfstein, D., Hou, W., Miller, T., Mistry, K. B., & Swartz, K. (2005). Maternal depressive symptoms and children's receipt of health care in the first 3 years of life. *Pediatrics, 115*, 306–314.

Muñoz, R. F., Beardslee, W. R., & Leykin, Y. (2012). Major depression can be prevented. *American Psychologist, 67*, 285–295.

Muñoz, R. F., Le, H. N., Ippen, C. G., Diaz, M. A., Urizar Jr, G. G., Soto, J., . . . Lieberman, A. F. (2007). Prevention of postpartum depression in low-income women: Development of the Mamás y Bebés/Mothers and Babies course. *Cognitive and Behavioral Practice, 14*(1), 70–83.

National Institute for Health Care Management (NIHCM) Foundation. (2010). *Identifying and treating maternal depression: Strategies and considerations for health plans.* Author. Retrieved from www.nihcm.org/pdf/FINAL_MaternalDepression6-7.pdf

National Research Council & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development.* J. P. Shonkoff & D. A. Phillips, (Eds.), Board on Children, Youth, and Families; Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academies Press.

National Research Council & Institute of Medicine. (2009a). *Depression in parents, parenting, and children: Opportunities to improve identification, treatment, and prevention.* Washington, DC: National Academies Press.

National Research Council & Institute of Medicine. (2009b). *Preventing mental, emotional, and behavioral disorders among young people.* Washington, DC: National Academies Press.

O'Hara, M. W., Stuart, S., Gorman, L. L., & Wenzel, A. (2000). Efficacy of interpersonal psychotherapy for postpartum depression. *Archives of General Psychiatry, 57*, 1039–1045.

Pearson, R. M., Evans, J., Kounali, D., Lewis, G., Heron, J., Ramchandani, P. G., . . . Stein, A. (2013). Maternal depression during pregnancy and the postnatal period: Risks and possible mechanisms for offspring depression at age 18 years. *JAMA Psychiatry, 70*, 1312–1319.

Perry, D. F., Tandon, S. D., Edwards, K., & Mendelson, T. (2014). Preventing perinatal depression through home visiting: The Mothers and Babies Course. *Zero to Three, 34*(5), 45–51.

Peterson, S. M., & Albers, A. B. (2001). Effects of poverty and maternal depression on early child development. *Child Development, 72*, 1794–1813.

Schraufnagel, T. J., Wagner, A. W., Miranda, J., & Roy-Byrne, P. P. (2006). Treating minority patients with depression and anxiety: What does the evidence tell us? *General Hospital Psychiatry, 28*, 27–36.

Siefert, K., Williams, D. R., Finlayson, T. L., Delva, J., & Ismail, A. I. (2007). Modifiable Risk and Protective Factors for Depressive Symptoms in Low-Income African American Mothers. *American Journal of Orthopsychiatry, 77*, 113–123.

Substance Abuse and Mental Health Services Administration. (in press). *Depression in mothers: More than the blues—A toolkit for family service providers.* Rockville, MD: Author.

Toth, S. L., Rogosch, F. A., Manly, J. T., & Cicchetti, D. (2006). The efficacy of toddler-parent psychotherapy to reorganize attachment in the young offspring of mothers with major depressive disorder: A randomized preventive trial. *Journal of Consulting and Clinical Psychology, 74*, 1006–1016.

Vericker, T., Macomber, J., & Golden, O. A. (2010). *Infants of depressed mothers living in poverty: Opportunities to identify and serve.* Retrieved from www.urban.org/publications/412199.html

World Health Organization. (2001). *The world health report 2001, mental health: New understanding, new hope.* Geneva, Switzerland: Author.

Yoshikawa, H., Aber, J. L., & Beardslee, W. R. (2012). The effects of poverty on the mental, emotional, and behavioral health of children and youth: Implications for prevention. *American Psychologist, 67*, 272–284.

Implementing Universal Maternal Depression Screening in Home Visiting Programs

A Pragmatic Overview

LISA S. SEGRE
University of Iowa

DARBY TAYLOR
Des Moines Healthy Start Project, Iowa

Depression is a serious and frequent complication of childbirth and is the leading non-obstetric cause of hospitalization among women in the U.S. (Jiang et al., 2002) and a well-documented risk factor for a broad range of developmental delays and behavioral problems in infants and children (O'Hara & McCabe, 2013). Impoverished women, a group typically targeted by home visiting programs, are at an increased risk. For example, a study of 4,332 women in Iowa found impoverished women were 4 times more likely to suffer significant depressive symptoms, compared to high-income women: Depression frequency was 28.3% in the lowest annual income bracket versus 6.7% in the highest (Segre, O'Hara, Arndt, & Stuart, 2007). Alarmingly, depression in female welfare recipients is also associated with loss of welfare support, household food insecurity, and less optimal child health (Casey et al., 2004). Although it is understandable that poverty might be one correlate of maternal depression, it is equally important to note that depression is not an inevitable consequence of poverty. In the aforementioned study, for example, the majority of women (71.7%) in the lowest income bracket did not experience depressive symptoms. To maximize the potential for maternal emotional well-being, even in the face of poverty, home visiting programs serving low-income mothers would be well advised to implement a depression screening and mental health referral program.

Although depression screening might seem to be a relatively simple task, implementation is recognized as unexpectedly complicated. "Its [depression screening] introduction into primary care is anything but simple. In its wake it carries widespread system change as well as a new philosophy" (Elliott, 1994, p. 229). Given this complexity, we will attempt to clarify and outline approaches to maternal depression screening that, in our experience, have proven successful. As background, we will briefly introduce the relevant U.S. policy, academic debate, and federal law, as well as describe our own experiences in implementing depression screening. We will then review what we have found to be the three key elements of implementing depression screening as a "how-to-guide." Finally, we will provide a case-study description of the implementation of universal maternal depression screening in the Des Moines Healthy Start home visiting program.

Abstract

Maternal depression, although prevalent in low-income women, is not an inevitable consequence of poverty. Nevertheless, depression is a double burden for impoverished women: compromising infant development and diminishing mothers' ability to benefit from or effectively use home visiting services. Without universal screening, depression is often missed. The trust and rapport that home visitors establish with mothers uniquely positions them to screen for depression. Yet, implementing universal depression screening is a complex undertaking. This article provides a pragmatic overview of the key elements of a universal screening program followed by a case study exemplar of universal depression screening in the Des Moines Healthy Start Project.

Depression Screening—Sociopolitical Context

The U. S. Preventative Services Task Force (USPSTF, 2009) recommended depression screening for all adults "when staff-assisted depression-care supports are in place to assure accurate diagnosis, effective treatment, and follow-up." Similarly, a wide spectrum of organizations specifically endorsed universal screening of perinatal women (American College of Nurse-Midwives, 2002; Association of Women's Health Obstetric and Neonatal Nurses, 2008; National Association of Pediatric Nurse Practitioners, 2003). Despite these endorsements, the requirement for screening for perinatal depression remains the subject of considerable academic debate, centering on whether screening ultimately improves mental health outcomes in women and children (Austin & The Marcé Society Postion Statement Advisory Committee, 2014). Amidst this debate, health care providers and insurance companies are nevertheless required by the recently passed Patient Protection and Affordable Care Act (Section 2713) to comply with any preventive health services backed by Grade-B evidence. Because the USPSTF recommendation to screen all adults for depression is based on Grade-B evidence, depression screening of postpartum women falls under this newly enacted federal legislative mandate (Rhodes & Segre, 2013). In addition to this federal mandate, maternal depression screening is also required of some home visiting programs such as Healthy Start or the Maternal, Infant, and Early Childhood Home Visiting Program.

Implementing Depression Screening

In 2002, well before the passage of the Patient Protection and Affordable Care Act, the Health Resources Services Administration (HRSA) required that all funded Healthy Start programs screen their participants for maternal depression. This mandate was based on the recognition of an empirically established link between maternal depression and poor infant outcome (Segre, O'Hara, Brock, & Taylor, 2012). In response to the mandate, the director of the Des Moines Healthy Start Project (DMHSP) requested that our University of Iowa team of perinatal depression experts consult with them to develop a depression screening protocol. To meet this request, we used a one-to-one, intensive consultation model (Segre, O'Hara, Brock, et al., 2012) to extensively train the DMHSP home-visiting staff in perinatal depression and screening strategies. In addition, over the course of 8 years, we conducted a longitudinal program evaluation, which revealed that this mandated, maternal depression screening program was indeed a success. The evaluation showed that while, at the outset, home visitors had already showed willingness to comply, after universal maternal depression screening was in place for 8 years it had achieved nearly unanimous compliance. Compliance in 2002 had been 83%, and reached a nearly perfect 98% by 2009 (Segre, O'Hara, Brock, et al., 2012).

> Home visiting programs serving low-income mothers would be well advised to implement a depression screening and mental health referral program.

This successful implementation of maternal depression screening in DMHSP spurred consultation requests from numerous other social service and health agencies in Iowa, some of which were also home visiting programs. Because it was not feasible for our expert team to provide the same intensive one-to-one consultation to all of these agencies, we instead adopted the "train-the-trainer" approach that had been developed in the U.K. to broadly implement maternal depression screening (Elliott, Ashton, Gerrard, & Cox, 2003). In our train-the-trainer method, the team of perinatal experts convened a central workshop in which representatives from various social services agencies were educated about perinatal depression, were mentored while developing training materials for educating their own staff, and were provided one-to-one consultation on developing depression screening protocols that were tailored to their particular agency settings. Train-the-trainer participants, in turn, educated their staff and implemented depression screening in their respective agencies or programs. Evaluation results reflect the success of this dissemination model. In the first 3 years of the train-the-trainer program, 32 agencies implemented maternal depression screening in 20 counties throughout Iowa, thus reaching 58.2% of the Iowa population. Moreover, screening rates were high in these agencies (Segre, Brock, O'Hara, Gorman, & Engeldinger, 2011).

Concomitantly with train-the-trainer program, HRSA also engaged our team of perinatal depression experts to provide technical-assistance consultations to 11 Healthy Start projects throughout the U.S to help them fulfill the HRSA mandate. Because the consultation visits were necessarily brief, our team developed a third consultation model in which, during a 2-day period, the consultation team educated agency staff about perinatal depression and advised agency directors. Our evaluations of these consultations indicated that staff participating in the technical assistance program felt their knowledge increased significantly, and the majority rated technical assistance presentations as "useful" to "very useful." Similarly, most of the Healthy Start project directors rated our consultations as "useful " or "very useful" in achieving their own goals for the technical assistance consultation (Segre, O'Hara, & Fisher, 2012).

Across these three consultation experiences, the approach used by our team varied significantly and was markedly shaped by logistical factors (e.g., distance to each location, time available for consultation, and the number of agencies served). Nevertheless, successful implementation of universal depression screening always entailed three essential steps: assist agencies in developing a maternal depression screening protocol tailored to their organizational context, educate providers about perinatal depression and screening, and evaluate performance of the new program.

Step 1: Developing a Screening Protocol

A screening and referral protocol specifies all procedures that will be used to screen women for depression and, when needed, procedures for providing a treatment referral. Because the organizational context of different home visiting programs, or even different sites of the same home visiting programs, can vary significantly (e.g., types of clients served and local treatment resources), this protocol must be specifically tailored for each setting. Listed below are several key elements of the depression screening protocol that must be specified.

SCREENING TOOL. *You can't tell by looking*, the slogan used in Wisconsin's perinatal depression awareness campaign (Wisconsin Association for Perinatal Care, 2014) succinctly summarizes the body of empirical research indicating that depression is not always obvious and that a screening tool should be used to improve detection (Georgiopoulos, Bryan, Wollan, & Yawn, 2001). In addition, a screening tool is especially helpful for home visitors whose knowledge and experience with mental health issues such as depression may be limited. For such staff, a screening tool provides a structured way to assess for depression and, importantly, a means to invite women to discuss how they are feeling emotionally.

Admittedly, selecting a depression screening tool is not a trivial task that can be quickly

Photo: ©iStockphoto.com/LattaPictures

Home visitors who know that mothers are depressed may modify their approach to better serve the women and their families.

accomplished, but a good starting point is a committee meeting that includes representation from administration, clinical staff, and, if possible, consumers who will be screened. The first task of the committee would be to describe the organizational context of the home visiting program, including the demographic profile of the women served, the frequency and duration of prospective screenings, whether or not a budget exists that can cover screening expenses, and any other locally relevant factors that will ultimately influence the choice of the specific tool. For example, if the program serves many women whose primary language is not English, then the availability of translations will be an important factor dictating the selection of a screening tool. With these demographic and organizational specifications in mind, the committee would review the wide array of depression screening tools available, with the goal of selecting a subset for more extensive consideration. Two published reviews are useful in locating the broad array of depression screening tools available: the first covers depression screening scales used across the lifespan, in primary care settings (Sharp & Lipsky, 2002); the second specifically focuses on screening instruments for postpartum depression (Boyd, Le, & Somberg, 2005).

In the final selection phase, the committee should extensively assess information regarding the effectiveness of the selected subset of screening tools and perhaps even conduct a pilot in which committee members who are learning to administer the tools also complete each of the tools themselves. These first-hand experiences will not only inform scale selection, but will also assist later in the development of training materials for staff education. Finally, after selecting a specific tool and before going "live" with depression screening, some additional administrative tasks must be completed, including the acquisition of any required translations and specification of a storage site for completed forms. With regard to data storage, whether to include electronic databases will also be an important consideration

CUTOFF SCORE. Determining the appropriate cutoff score (that is the score flagging clients as needing mental health services) should be based both on the psychometric properties of the screening tool as well as on organizational factors. The cutoff score represents the point at which the respondent likely meets diagnostic criteria for major depressive disorder, the psychiatric manifestation of clinically significant depression. Psychometric information on the "sensitivity" of a specific cutoff score provides an index of the "true positive rate" (i.e., the proportion of women correctly identified as depressed) based on that score. For example, a sensitivity of 0.90 means that 90% of women scoring above the cutoff point are likely to be identified correctly and that 10% are false alarms (i.e., they score above the cutoff but do not actually have major depressive disorder). Research has demonstrated that cutoff scores vary both within and between screening instruments depending on whether the screening was done during pregnancy or postpartum (Ji et al., 2011), and as a result programs often use different cutoffs. Organizational factors (e.g., the frequency of screening) should also be considered in selecting a cutoff score. For example, in programs where home visitors frequently contact postpartum women but can offer few treatment resources, a conservative (i.e., higher) cutoff score may be advisable. In this case, minimizing the number of false positives would be important, given the limited treatment resources and frequent opportunities to screen women. In contrast, a program in which home visitors only infrequently meet with women, a lower cutoff score might be advisable.

SUICIDE RISK GUIDELINES. Some depression screening scales include an item that specifically assesses a woman's proclivity for self-harm. For example, the last item of the Edinburgh Postnatal Depression Scale (EPDS; Cox, Holden, & Sagovsky, 1987) requires women to indicate how frequently they experienced thoughts of self-harm in the last week. Their choices are *never*, *hardly ever*, *sometimes*, or *quite often*. If the screening scale selected has an item specific to suicide, the protocol should outline in detail the recommended course of action, indicating both the score(s) that should prompt action and who will provide emergency services. Because a response indicating significant suicide risk is a rare event, home visitors will not gain a lot of experience managing this situation. It is therefore particularly important that these procedures be outlined succinctly in an easily accessed handout that is reviewed and updated annually.

SCREENING SCHEDULE. Across our three consultation experiences, the mistake most frequently encountered in implementing maternal depression screening was that clinical staff members indicated they were prompted to screen for depression only if a woman "seems" sad. While signs of clinical depression can and should prompt an off-schedule screen, any newly developed depression screening protocol should specify a screening schedule that is closely followed. Indeed, "you can't tell by looking," and depression can arise at any time, even in women who may not have been depressed in prior assessments. A regular depression screening schedule should be viewed as analogous to the routine blood pressure monitoring that is done in primary care. It is done routinely, regardless of a patient's apparent health.

Despite the wealth of epidemiological research on depression during pregnancy and the postpartum period, no particular time of emotional vulnerability has been identified that might guide an evidence-based screening schedule. Specifically, the results of a meta-analytic review indicated that, across the first postpartum year, the prevalence of both major and minor depression is relatively stable, revealing no particular time of increased risk (Gavin et al., 2005). An earlier review of this research, however, found that the majority of women developed depressive symptoms within the early postpartum period (3 weeks to 3 months), and that some new cases continued to emerge throughout the first postpartum year and beyond (Goodman, 2003). Still other evidence suggests that depression often emerges during pregnancy, and detection at this important time point may be especially beneficial for both mothers and children (Pearson et al., 2013). Home visiting programs should therefore schedule at least one screen during pregnancy, in the early postpartum months, and additional screens throughout the first postpartum year.

A final consideration in specifying a screening schedule is to determine whether one elevated score will be sufficient to prompt a referral or whether the first elevated score will prompt a follow-up screen and then a referral if still required. Acting on the basis of a single elevated score may unnecessarily inflate use of treatment resources or, in

cases when an elevated score reflected temporary circumstances, women may not feel they need to follow through on referral. In light of these concerns, when possible, some consideration might be made to follow up with women 1 to 2 weeks after an elevated screening score, to administer a second confirmatory screen.

STAFF ROLES. The depression screening protocol should clearly outline which staff will be responsible for specific screening tasks, including who will conduct the screening, discuss the results, and when needed, make the referral. Although in many universal depression screening programs these screening tasks are often performed by the same person, in some programs it may be appropriate to designate different staff for each task. For example, in a home visiting program that employs a full-time social worker, screening might be done by the home visitor, while the social worker might be the most appropriate person to conduct the follow-up screen and, if needed, referral for mental health services. Finally, in establishing staff screening roles, some consideration must be given to whether translators will be used in screening. Keep in mind that although translated screening tools are helpful, not all non-native speakers of English are literate in their native language, so some women may require a translator to complete the screening process.

TREATMENT RESOURCES. The USPTF recommendation for depression screening of all adults included an important proviso that screening should be conducted "when staff-assisted depression-care supports are in place to assure accurate diagnosis, effective treatment, and follow-up" (2009, p. 784). While the USPTF proviso implies that identifying women with significant depressive symptoms is only useful if effective help can be provided, there are many reasons why mothers may benefit from screening. For example, the opportunity to talk with a home visitor about mental health challenges can help normalize the experience. And home visitors who know that mothers are depressed may modify their approach to better serve the women and their families. Yet, finding treatment options for depressed mothers will probably be the most challenging aspect of developing a depression screening protocol. Complicating this challenge is the limited availability of mental health specialists (e.g., psychiatrists, psychologists, and social workers). (For examples of promising treatment approaches, see Ammerman, Putnam, Teeters, & Van Ginkel, this issue, p. 20; Beeber et al., this issue, p. 35; and Perry, Tandon, Edwards, & Mendelson, this issue, p. 45.) Furthermore, even when such help is available, many women on the receiving end are not comfortable using these mental health services or experience barriers

> Although it is understandable that poverty might be one cause of maternal depression, it is equally important to note that depression is not an inevitable consequence of poverty.

such as transportation or child care. Finally, a wide range of depression severity will be evident among any group of women identified as clinically depressed (Pollack, Segre, O'Hara, & Stuart, 2011). Thus, to meet the needs of women who will be more or less affected or less willing to engage with traditional providers, alternative treatment services might be considered in addition to services provided by mental health specialists.

For some women, perhaps those whose symptoms have not yet reached the cutoff score, it may be sufficient to provide an educational brochure which describes maternal depression and outlines effective self-help approaches to care (Heh & Fu, 2003). Such a brochure was developed in English and Spanish by HRSA in 2006. The brochure is offered free of charge, and briefly describes postpartum depression in an easy-to-understand manner, using a visually appealing format. The information covered includes the definition of perinatal depression, a description of the full range of perinatal mood disorders (blues, depression, and psychosis), the negative effects of depression, an adapted checklist version of the EPDS, as well as a description of a range of treatment options.

In addition, women may benefit from referral to Postpartum Support International, a lay organization specializing in perinatal mental health issues. Postpartum Support International provides numerous, accessible options for help, including a "warm line" that distressed new mothers can call, educational brochures and DVDs, and the "chat with an expert" on-line forum. Because poor social support has been consistently identified as a moderate to strong risk factor of postpartum depression (O'Hara & McCabe, 2013), support groups led by home visiting program staff can be incorporated as a treatment resource in home visiting programs. Such support groups are particularly useful for women who do not speak English and for whom professional counseling services may not be available. Many poor women, particularly immigrants, are isolated at home with small children, and the opportunity to get together with others who speak their language can have a positive impact on depressed mood. Note that because impoverished women often cannot drive or do not have access to a car, consideration should be given to securing transportation to assist women in attending a support group gathering.

Finally, for women with more severe symptoms, treatment might include some of the above services in conjunction with medication, which can be provided by her primary care physician, obstetrician, or pediatrician.

Step 2: Educating Home Visitors About Maternal Depression and Screening Strategies

Home visitors are not mental health specialists and so may not have sufficient knowledge about depression to feel comfortable screening women for depression. The importance of educating home visitors about perinatal depression is reinforced by the finding that nurses were more likely to comply with a screening program if they had been trained about perinatal depression and screening procedures (Massoudi, Wickberg, & Hwang, 2007). The unfortunate reality is, however, that despite the importance of educating staff, not every home visiting program has access to a team of perinatal mental health experts who can lead training. It is noteworthy that the Substance Abuse and Mental Health Services Administration (in press) has published a useful toolkit for family service providers, including home visitors, addressing depression in mothers. In addition, recognizing this educational need, the National Institute of Mental Health engaged perinatal depression experts to work with small web-based design businesses to develop educational programs that are available on the Internet. Two offerings were developed: MedEdPPD and STEP-PPD.

MedEdPPD provides a wide range of resources to support implementation of universal depression screening; these include educational modules for which continuing education credit is available for a small fee, interactive case studies, readings pertaining to perinatal mental health (both cases studies and current research), provider tools, and a library of educational slides that could be used to train home visiting staff (Wisner, Logsdon, & Shanahan, 2008). For those implementing depression screening in home visiting programs, MedEdPPD offers two particularly useful educational modules: "Responsible PPD Screening: Rationale, Timing and Follow-up" and "Training Office Staff on PPD Basics." The MedEdPPD program can be accessed free of charge and is available online.

STEP-PPD, the second educational program sponsored by the National Institutes of Mental Health, contains three educational modules: (a) Understanding Postpartum Depression, (b) Assessing Postpartum Depression, and (c) Treating Postpartum Depression (Baker, Kamke, O'Hara, & Stuart, 2009). The content of these modules has been customized for particular professional audiences (e.g., physician, nurses, social workers). Within each module, educational objectives are provided, as well as case studies, interactive video clips, and links to additional resources. These resources are provided without a fee, and Continuing Medical Education credits are provided for a small fee.

While education about perinatal mood disorders is necessary, information alone does not prepare home visitors in how to effectively implement depression screening. Thus educational sessions also must include clinical training components that provide home visitors with an opportunity to rehearse implementing this new practice so that they feel comfortable implementing the screening steps. Specifically, home visitors may require role-playing practice with introducing screening to mothers, as well as guidance with administering and scoring the tool, providing feedback, and making an effective referral.

Step 3: Program Evaluation

A third critical element of implementing universal maternal depression screening is assessing staff compliance with the screening protocol and providing home visiting staff with feedback. Particularly, when the practice is new and not yet well integrated into the culture of the home visiting program, it is helpful for the home visitors both to know that the depression screening service is being monitored and to provide them with a venue for discussing problems or barriers encountered as they implement this new task. Thus, the planning phase of implementing a depression screening program should also include the development of an evaluation plan that specifies who will supervise the home visitors and how frequently; the program should also designate a venue for discussion of successes and challenges, and finally, specify the staff member in charge of monitoring home visitor compliance.

Depression Screening in DMHSP

In this last section, we describe the how universal depression screening program was implemented in the DMHSP. It is important to keep in mind that there is no one-size-fits- all approach and that organizational context should ultimately determine how depression screening is implemented (Segre, McCabe, Stasik, O'Hara, & Arndt, 2011).

Step 1: Depression Screening Protocol

The key elements of the DMHSP depression screening protocol are listed in Table 1, with the rationale of these choices described here.

SCREENING SCALE/CUTOFF SCORE. The EPDS (Cox et al., 1987) was selected for several reasons: It is easy to administer and score, many translations are available, it is acceptable to most women, and, importantly, if a woman has an elevated score the content of the items (e.g., I have been sad and miserable) provides the home visitors a specific point of inquiry. Although the recommended cutoff for this scale is 13 or above (Cox & Holden, 2003), 12 or above was selected because in this high-risk population we wanted to capture more women and thus decided to use a slightly lower threshold. Hard copy forms are stored in the participant's file, and all EPDS scores, referrals, and participant/case manager follow-up are entered into the DMHSP database.

SUICIDE RISK GUIDELINES. The suicide item on the EPDS ("In the past week, the thought of harming myself has occurred to me") has four responses: *never*, *hardly ever*, *sometimes*, and *quite often*. Any response other than *never* requires that the case manager complete a suicide assessment: *Does the participant have a plan for how she might hurt herself? Does the participant have the means to carry out the plan? Does the participant have a history of past suicide attempts?* The case manager then assesses for safety: *Can the participant be left alone? Does a safety plan need to be established before the case manager leaves the home? Does the Mobile Crisis Unit need to be contacted?* Possible actions when the participant is in crisis include the case manager making contact with the immediate supervisor, discussing possible options with the participant, contacting a mental health counselor, making an immediate referral to the Mobile Crisis Unit, assisting the participant in receiving immediate hospital evaluation, or a combination of these.

SCREENING SCHEDULE. Pregnant women are screened several times: within 30 days of admission to the program, end of first trimester, end of second trimester, and end of third trimester or 1–2 weeks postpartum. Interconceptional women are screened within 30 days of admission; 1–2 weeks postpartum; 3, 12, 18, and 24 months postpartum; and at discharge from the program. Additional EPDS screenings are conducted at the discretion of the case manager or participant, and all participants with an elevated EPDS are rescreened after 4 weeks. The EPDS schedule was chosen given the needs of the high-risk population.

STAFF ROLES. DMHSP participants are visited regularly by case managers who are responsible for the administration of the EPDS, referrals for needed resources, and tracking the status and outcome of mental health referrals. The status of all referrals is monitored and recorded monthly. Case managers and participants identify mental

Table 1. Des Moines Healthy Start Depression Screening and Referral Protocol

Depression Screening Protocol Elements	Des Moines Healthy Start Project
Screening Tool	Edinburgh Postnatal Depression Scale (EPDS; Cox et al., 1987)
Cutoff Score	≥12
Screening Schedule	Pregnant women are screened within 30 days of admission to the program, end of first trimester, end of second trimester, and end of third trimester or 1–2 weeks postpartum. Interconceptional women are screened: within 30 days of admission to the program; 1–2 weeks postpartum; 3, 12, 18, and 24 months postpartum; and at discharge from the program.
Staff Roles	Screening and referral provided by the home visitor
Treatment Resources	Internal Treatment Resources • Home visitors provide Listening Visits • Support groups • Mental health consultant • Psychiatrist External Resources • Local mental health specialists
Administrative Tasks	Edinburgh Postnatal Depression Scale (Cox et al., 1987) Translations: Spanish, Vietnamese, Arabic. Completed form is stored in paper record and entered into database

health services as part of the care plan. The case manager discusses the progress of the goal with the participant during each visit and assists the participant in addressing any barriers to accessing mental health services, such as transportation, child care, identifying affordable mental health providers or services, and applying for medical assistance. Once a mental health provider is identified, the case manager requests a release of information from the participant to allow contact between the case manager and provider regarding follow-through with appointments, progress, medications, and information related to EPDS scores.

TREATMENT RESOURCES. All DMHSP women with an elevated EPDS score (12 or higher) are referred by their case manager or outreach specialist to a mental health professional for assessment. As indicated in Table 1, referrals are made to internal Visiting Nurse Services (VNS) of Iowa mental health services, support groups, and other community-based providers.

DMHSP mental health counselors (3.0 FTE) have been part of the project since 2005 and provide in-office and in-home therapy services to participants. Counselors are also available to attend visits with case managers and participants to discuss and explain mental health options and reinforce the importance of follow-through with services. In addition to the provision of services to all DMHSP participants, regardless of insurance status, barriers are further reduced through the provision of transportation, child care, and interpretation as needed. Since 2007, DMHSP participants have been provided access to the services of a community-based psychiatrist if the need for medication has been identified.

As part of stepped approach to mental health services, in 2005, the DMHSP partnered with the Drs. Lisa Segre and Michael O'Hara of the University of Iowa to implement Listening Visits, a cutting-edge but empirically supported treatment offered to participants with mild to moderate depression as one of the treatment resources. From 2005 to 2012, DMHSP participated in two clinical trials evaluating the effectiveness of this intervention as delivered by U.S. home visitors: an open trial (Segre, Stasik, O'Hara, & Arndt, 2010) and a multisite randomized controlled trial. The results of both trials provide empirical support for the effectiveness of Listening Visits. This intervention provides an effective first-line approach for women with mild to moderate depressive symptoms, and a means to engage women either while they are waiting for professional services or as a means to reduce their concern about "talk therapies."

Photo: ©iStockphoto.com/Ximagination

Maternal depression is particularly harmful because, even in its milder forms, depression has significant negative effects on not only mothers but also on their children.

Step 2: Provider Education

Immediately after the HRSA mandate, training of the DMHSP case managers around universal maternal depression screening was conducted directly by Drs. O'Hara and Segre, perinatal mental health specialists at the University of Iowa. However, from 2005–2008, three DMHSP staff completed the "Train-the-Trainer: Maternal Depression Screening Program" (Segre, Brock, et al., 2011). In turn, these "certified" trainers have since assumed responsibility for providing education pertaining to maternal depression and screening. Because they are on-site these trainers ensure that new staff in the DMHSP receive consistent and timely training for depression screening. All case managers are provided pre-service training on the use of the EPDS, and formal training is scheduled within 6 months of employment.

Step 3: Evaluation

The DMHSP, one of the programs administered by VNS of Iowa, participates in both internal and external evaluation efforts. Internally, staff enter participant data (including EPDS outcomes and follow-up) into the VNS of Iowa database. The DMHSP quality assurance specialist is responsible for ongoing monitoring of the data, and verification reports regarding data are regularly produced and shared with project administration, including the project director and case management supervisors. Twice-yearly, all case managers are evaluated on 13 project measures, which includes the EPDS completion and follow-up. If areas for improvement are identified, staff and supervisors complete a training and corrective action plan to ensure the EPDS is administered as required by program standards. In addition, as part of internal evaluation efforts, the DMHSP director in collaboration with the perinatal mental health expert team, conducted a longitudinal evaluation of the DMHSP depression screening program (Segre, Brock, et al., 2011). Finally, since 2006, the DMHSP has contracted with a program evaluation expert from an external university to lead external evaluation efforts. Performance monitoring data, including that pertaining to universal maternal depression screening, are included in two reports each year that document all aspects of the participant population and services provided.

Conclusions

Perinatal depression is prevalent, especially among impoverished mothers. For families, maternal depression is particularly harmful because, even in its

Learn More

MedEdPPD
www.mededppd.org

Postpartum Support International
www.postpartum.net

STEP-PPD
www.step-ppd.com

milder forms, depression has significant negative effects on not only mothers but also on their children. The Patient Protection and Affordable Care Act is addressing the problem of depression in all adults, including postpartum mothers, via a call for mandated screening. Although universal depression screening will likely prove to be a complex undertaking, home visiting programs for low-income mothers offer an inroad that could speed the delivery of services to an at-risk population. The long-term relationship that home visitors develop with program participants uniquely positions them not only to screen women but also to make sensitive referrals tailored to the needs of the mother and to provide follow-up to ensure that she receives treatment. Finally, home visitors are well positioned to engage women in a wide array of interventions that have been developed specifically for delivery in the home visiting setting (Ammerman et al., 2013; Beeber, Holditch-Davis, Belyea, Funk, & Canuso, 2004; Segre et al., 2010; Tandon, Perry, Mendelson, Kemp, & Leis, 2011). Before any treatment can begin, however, depression symptoms must be identified. Thus, universal maternal depression screening programs are a critical, first step toward the goal of ensuring maternal mental well-being. Clearly, home visiting programs are ideally poised to provide screening services to a population that is disproportionately burdened by depression.

Lisa S. Segre, *PhD, is an assistant professor in the College of Nursing at the University of Iowa. As a community/clinical psychologist, Dr. Segre's program of research focuses on the identification and treatment of maternal depression. She has implemented and evaluated universal maternal depression screening in a broad range of health and service settings using diverse consultation models. In addition, she has implemented and evaluated Listening Visits, an empirically supported intervention developed for delivery by non-mental health specialists at the client's point-of-care.*

Darby Taylor *is the project director for the Des Moines Healthy Start Project with Visiting Nurse Services. Ms. Taylor, who received a bachelor of science from Iowa State University, has extensive experience with home visitation and early intervention programs, including Healthy Families America, Parents as Teachers, and Early Head Start. In addition to her role as project director, Ms. Taylor has also coauthored several publications including the "Evidence Based Assessment Workbook: Developing Quality Assurance and Evidence Based Practices for Your Family Support Program" as well as the program evaluation of the universal maternal depression screening program in the Des Moines Healthy Start Project.*

Acknowledgments

The authors would like to acknowledge Michael W. O'Hara, PhD, a member of the perinatal mental health consultation team for the projects described in this manuscript, as well as Diana Colgan, PhD, the College of Nursing editor.

References

American College of Nurse-Midwives. (2002). *Depression in women: Position statement.* Retrieved from www.midwife.org/siteFiles/position/Depression_in_Women_05.pdf

Ammerman, R. T., Putnam, F. W., Altaye, M., Stevens, J., Teeters, A. R., & Van Ginkel, J. B. (2013). A clinical trial of in-home CBT for depressed mothers in home visitation. *Behavior Therapy, 44*, 359–372. doi: 10/1016/j.beth.2013.01.002

Ammerman, R. T., Putnam, F. W., Teeters, A. F., & Van Ginkel, J. B. (2014). Moving Beyond Depression: A collaborative approach to treating depressed mothers in home visiting programs. *Zero to Three, 34*(5), 20–27.

Association of Women's Health Obstetric and Neonatal Nurses. (2008). *The role of the nurse in postpartum mood and anxiety disorders.* Retrieved from www.awhonn.org/awhonn/content.do?name=05_HealthPolicyLegislation/5H_PositionStatements.htm

Austin, M.-P., & The Marcé Society Postion Statement Advisory Committee. (2014). Marcé International Society position statement on psychosocial assessment and depression screening in perinatal women. *Best Practice & Research Clinical Obstetrics and Gynaecology, 28*, 179–187. doi: 10.1016/j.bpobgyn.2013.08.016

Baker, C. D., Kamke, H., O'Hara, M. W., & Stuart, S. (2009). Web-based training for implementing evidenced-based management of postpartum depression. *Journal of the American Board Family Medicine, 22*, 588–589.

Beeber, L. S., Holditch-Davis, D., Belyea, M. J., Funk, S. G., & Canuso, R. (2004). In-home intervention for depressive symptoms with low-income mothers of infants and toddlers in the United States. *Health Care for Women International, 25*, 561–580. doi: 10.1080/07399330490444830

Beeber, L. S., Schwartz, T. A., Holditch-Davis, D., Canuso, R., Lewis, V., & Matsuda, Y. (2014). Interpersonal psychotherapy with a parenting enhancement adapted for in-home delivery in Early Head Start. *Zero to Three, 34*(5), 35–44.

Boyd, R. C., Le, H. N., & Somberg, R. (2005). Review of screening instruments for postpartum depression. *Archives of Women's Mental Health, 8*, 141–153. doi: 10.1007/s00737-005-0096-6

Casey, P., Goolsby, S., Berkowitz, C., Frank, D., Cook, J., Cutts, D., . . . Meyers, A. (2004). Maternal depression, changing public assistance, food security, and child health status. *Pediatrics, 113*, 298–304. doi: 10.1176/appi.ps.54.3.333

Cox, J. L., & Holden, J. (2003). *Perinatal mental health: A guide to the Edinburgh Postnatal Depression Scale (EPDS)*. London, UK: Gaskell.

Cox, J. L., Holden, J. M., & Sagovsky, R. (1987). Detection of postnatal depression: Development of the 10-item Edinburgh Postnatal Depression Scale. *British Journal of Psychiatry, 150*, 782–786.

Elliott, S. A. (1994). Uses and misuses of the Edinburgh Postnatal Depression Scale in primary care: A comparison of models developed in health visiting. In J. Cox & J. Holden (Eds.), *Perinatal Psychiatry: Use and misuse of the Edinburgh Postnatal Depression Scale* (pp. 221–232). London, UK: Gaskell.

Elliott, S. A., Ashton, C., Gerrard, J., & Cox, J. L. (2003). Is trainer training an effective method for disseminating evidence-based practice for postnatal depression? *Journal of Reproductive and Infant Psychology, 21*, 219–228.

Gavin, N. I., Gaynes, B. N., Lohr, K. N., Meltzer-Brody, S., Gartlehner, G., & Swinson, T. (2005). Perinatal depression: A systematic review of prevalence and incidence. *Obstetrics and Gynecology, 106*, 1071–1083. doi: 10.1097/01.AOG.0000183597.31630.db

Georgiopoulos, A. M., Bryan, T. L., Wollan, P., & Yawn, B. P. (2001). Routine screening for postpartum depression. *The Journal of Family Practice, 50*, 117–122.

Goodman, J. H. (2003). Postpartum depression beyond the early postpartum period. *Journal of Obstetric, Gynecologic, and Neonatal Nursing, 33*, 410–420.

Health Services Resource Administration. (2006). *Depression during and after pregnancy: A resource for women, their families, & friends.* Retrieved from http://mchb.hrsa.gov/pregnancyandbeyond/depression/index.html

Heh, S.-H., & Fu, Y.-Y. (2003). Effectiveness of informational support in reducing the severity of postnatal depression in Taiwan. *Journal of Advanced Nursing, 42*, 30–36.

Ji, S., Newport, D. J., Na, H., Knight, B., Zack, E. B., Morris, N. J., . . . Stowe, Z. N. (2011). Validity of depression rating scales during pregnancy and the postpartum period: Impact of trimester and parity. *Journal of Psychiatric Research, 45*, 213–219. doi: 10.1016/j.jpsychires.2010.05.017

Jiang, H. J., Elixhauser, A., Nicholas, J.,

Steiner, C., Reyes, C., & Bierman, A. S. (2002). Care of women in U.S. hospitals, *2000 HCUP Fact Book No. 3: AHRQ Publication No. 02-0044*. Rockville, MD: Agency for Healthcare Research and Quality.

Massoudi, P., Wickberg, B., & Hwang, C. P. (2007). Screening for postnatal depression in Swedish child health care. *Acta Paediatrica, 96*, 897–901. doi: 10.1111/j.1651-2227.2008.00292.x

National Association of Pediatric Nurse Practitioners. (2003). The PNP's role in supporting infant and family well-being during the first year of life: Position statement. *Journal of Pediatric Health Care, 17*, 19A–20A.

O'Hara, M. W., & McCabe, J. E. (2013). Postpartum depression: Current status and future directions. *Annual Review of Clinical Psychology, 9*, 379–407. doi: 10.1146/annurev-climpsy-050212-185612

Pearson, R. M., Evans, J., Kounali, D., Lewis, G., Heron, J., Ramchandani, P. G., ...Stein, A. (2013). Maternal depression during pregnancy and the potnatal period: Risks and possible mechanisms for offspring depression at age 18 years. *JAMA Psychiatry, 70*, 1312–1319.

Perry, D. F., Tandon, S. D., Edwards, K., & Mendelson, T. (2014). Preventing perinatal depression through home visiting: The Mothers and Babies Course. *Zero to Three, 34*(5), 45–51.

Pollack, L., Segre, L. S., O'Hara, M. W., & Stuart, S. (2011). Postpartum depression: The distribution of severity in a community sample. *Archives of Women's Mental Health, 14*, 363–364. doi: 10.1007/s00737-011-0228-0

Rhodes, A. M., & Segre, L. S. (2013). Perinatal depression: A review of US legislation and law. *Archives of Women's Mental Health, 16*, 259–270. doi: 10.1007/s00737-013-0359-6

Segre, L. S., Brock, R. L., O'Hara, M. W., Gorman, L. L., & Engeldinger, J. (2011). Disseminating perinatal depression screening as a public health initiative: A train-the-trainer approach. *Maternal and Child Health Journal, 15*, 814–821. doi: 10.1007/s10995-010-0644-1

Segre, L. S., McCabe, J. E., Stasik, S. M., O'Hara, M. W., & Arndt, S. (2011). Implementation of an evidence-based treatment into social service settings: The relative importance of aceptability and contextual factors. *Administration and Policy in Mental Health, 39*, 180–186. doi: 10.1007/s10488-011-0345-0

Segre, L. S., O'Hara, M. W., Arndt, S., & Stuart, S. (2007). The prevalence of postpartum depression: The relative significance of three social status indices. *Social Psychiatry and Psychiatric Epidemiology, 42*, 316–321. doi: 10.1007/s00127-007-0168-1

Segre, L. S., O'Hara, M. W., Brock, R. L., & Taylor, D. (2012). Depression screening of perinatal women by the Des Moines Healthy Start Project: Program description and evaluation. *Psychiatric Services, 63*, 250–255. doi: 10.1176/appi.ps.201100247

Segre, L. S., O'Hara, M. W., & Fisher, S. D. (2012). Perinatal depression screening in Healthy Start: An evaluation of the acceptability of technical assistance consultation. *Community Mental Health Journal, 49*, 407–411. doi: 10.1007/s10597-012-9508-z

Segre, L. S., Stasik, S. M., O'Hara, M. W., & Arndt, S. (2010). Listening Visits: An evaluation of the effectiveness and acceptability of a home-based depression treatment. *Psychotherapy Research, 20*, 712–721. doi: 10.1080/10503307.2010.518636

Sharp, L. K., & Lipsky, M. S. (2002). Screening for depression across the lifespan: A review of measures for use in primary care settings. *American Family Physician, 66*, 1001–1008.

Substance Abuse and Mental Health Services Administration. (in press). *Depression in mothers: More than the blues—A toolkit for family services providers.* Rockville, MD: Author.

Tandon, S. D., Perry, D. F., Mendelson, T., Kemp, K., & Leis, J. A. (2011). Preventing perinatal depression in low-income home visiting clients: A randomized controlled trial. *Journal of Consulting and Clinical Psychology, 79*, 707–712. doi: 10.1037/a0024895

U.S. Preventive Services Task Force. (2009). Screening for depression in adults: U.S. Preventive Services Task Force recommendation statement. *Annals of Internal Medicine, 151*, 784–792. doi: 10.7326/0003-4819-151-11-200912010-00006

Wisconsin Association for Perinatal Care. (2014). *Postpartum depression: What you can do.* Retrieved from www.perinatalweb.org/major-initiatives/postpartum-depression/what-you-can-do

Wisner, K. L., Logsdon, M. C., & Shanahan, B. R. (2008). Web-based education for postpartum depression: Conceptual development and impact. *Archives of Women's Mental Health, 11*, 377–385. doi: 10.1007/s00737-008-0030-9

Moving Beyond Depression

A Collaborative Approach to Treating Depressed Mothers in Home Visiting Programs

ROBERT T. AMMERMAN
Cincinnati Children's Hospital Medical Center, Ohio
University of Cincinnati College of Medicine

FRANK W. PUTNAM
University of North Carolina at Chapel Hill

ANGELIQUE R. TEETERS
JUDITH B. VAN GINKEL
Cincinnati Children's Hospital Medical Center, Ohio
University of Cincinnati College of Medicine

It is widely recognized that maternal depression leads to significant functional impairment and contributes to poor developmental outcomes in children (Pearson et al., 2013). Debilitating symptoms of depression result in mothers having great difficulty meeting the social and emotional needs of children. The impact of maternal depression is particularly pronounced in the first year of the child's life, a sensitive period for the emergence of foundational developmental capabilities (Bagner, Pettit, Lewinsohn, & Seeley, 2010). As a result, maternal depression contributes directly to the emergence of infant mental health problems. Depression typically occurs in discrete episodes that can vary in length and severity. As a result, depressed mothers struggle to develop and maintain a consistently nurturing and stimulating environment for children. This, in turn, contributes to toxic stress, which has been identified as an important determinant of negative outcomes throughout development (Garner, 2013).

The primary risk factors for developing depression in pregnancy and postpartum—trauma history, young age, social isolation, educational underachievement—are widely represented among mothers enrolled in home visiting programs. Depression is relatively common in these mothers. Ammerman, Putnam, Bosse, Teeters, and Van Ginkel (2010) reviewed the research on prevalence of maternal depression in home visiting and concluded that between 28% and 61% of mothers have clinically elevated symptoms at some point during service. Rates vary depending on screening instrument, cutoff used, and timing and frequency of assessment. In a study of 231 mothers followed over 18 months and assessed at three time points using the Beck Depression Inventory-II (Beck, Steer, & Brown, 1996), 39.5% met or exceeded a cutoff (≥17) associated with the psychiatric diagnosis of major depressive disorder (MDD), the most serious manifestation of depression (Teeters, Ammerman, Shenk, Putnam, & Van Ginkel, 2014). Given that maternal depression moderates and undermines home visiting outcomes (Duggan, Berlin, Cassidy, Burrell, & Tandon, 2009; Easterbrooks et al., 2013; McFarlane, Crowne, Burrell, & Duggan, this issue, p. 53), it is imperative that approaches are developed to identify, prevent, and

Abstract

Research indicates that up to half of mothers in home visiting experience clinically significant levels of depression during their participation in services. Depression alters maternal life course, negatively impacts child development, and contributes to poorer home visiting outcomes. This article describes the Moving Beyond Depression (MBD) program, an innovative and evidence-based approach to treating depressed mothers in home visiting. MBD uses In-Home Cognitive Behavioral Therapy, an empirically validated and collaborative intervention that overcomes barriers to treatment and contributes to recovery from depression and prevention of relapse. MBD has been successfully disseminated to other home visiting programs nationally.

treat maternal depression in home visiting. Such efforts will protect the sizable public investment in home visiting and has the potential to result in considerable cost savings.

Given the high proportion of mothers who enter home visiting with histories of MDD, or who develop the condition while receiving home visiting services, treatment is often necessary (Myers et al., 2013). Yet, depressed mothers in home visiting rarely obtain effective treatment in the community. Failure to identify clinically significant depression, stigma in seeking mental health services, lack of availability of mental health clinicians trained in evidence-based treatment of perinatal depression, child care needs, and transportation challenges are a few of the key barriers faced by mothers. Studies indicate that only 14%–48% of depressed mothers in home visiting access treatment in the community (Ammerman et al., 2010), and for most of these it is likely that treatment is inadequate or insufficient to bring about recovery. Moreover, when they do obtain treatment, low-income adults are more likely to receive antidepressant medications than evidence-based psychological treatments (Huybrechts et al., 2013) despite the fact that pharmacological treatment has been found to be less effective in depressed women with trauma histories (Klein et al., 2009), a common feature of mothers in home visiting.

Home visiting offers a unique opportunity to reach and engage depressed mothers who would otherwise not receive treatment. Mothers may not seek treatment because they do not think it is needed or will be helpful. However, because mothers join home visiting to provide the best start for their children, appealing to this altruistic motive can be a powerful way to inspire them to consider treatment as a way to benefit their child's health and development. Scheduled screening for depression increases the likelihood that mothers will be identified early in their depressive episode. Providing treatment at that time may accelerate recovery and reduce the child's exposure to the effects of a depressed primary caregiver. Engagement in treatment is facilitated by leveraging the strong relationship that mothers have with their home visitors. Encouraged to consider treatment by a trusted home visitor, depressed mothers may be more open to entering treatment. There is a clear need for focused and effective treatments that (a) are designed for the unique needs of new mothers in home visiting, (b) engage mothers in treatment, (c) overcome barriers to obtaining effective care, and (d) leverage ongoing home visiting to optimize outcomes for both mothers and children.

Developing an Adapted and Collaborative Treatment

In response to these needs, we systematically adapted cognitive behavioral therapy (CBT) to address the needs of depressed mothers receiving home visiting (Ammerman et al., 2011). CBT is an established, evidence-based treatment that has consistently been found to be effective in the treatment of depression (Hoffman, Asmundson, & Beck, 2013). In-Home Cognitive Behavioral Therapy (IH-CBT) was developed and field tested at Every Child Succeeds, a regional program in Cincinnati, Ohio, that provides home visiting to new mothers and their children in southwestern Ohio and northern Kentucky. It is implemented by therapists who provide treatment concurrently with ongoing home visiting. IH-CBT combines the core principles and techniques of CBT (Beck, 2011) with procedures and strategies that promote engagement, makes content relevant to the needs of mothers in home visiting, facilitates delivery in the home, and explicitly fosters a collaborative relationship between the therapist and home visitor in order to smoothly coordinate services. IH-CBT is an enhancement to standard home visiting that emphasizes the reduction of maternal depressive symptoms and recovery from MDD, thereby allowing home visitors to attend to issues related to parenting, maternal functioning, and child development.

In developing IH-CBT, we were guided by six objectives:

1. Maintain a steady focus on the amelioration of depressive symptoms. Depressed mothers often have comorbid conditions (particularly anxiety), complicated histories of trauma and hardship, and multiple stressors in their lives. An overly broad treatment focus runs the risk of insufficiently addressing each area of need. We reasoned that if mothers could effectively manage their mood and had more energy and motivational drive, they would be more available to their children and able to work more effectively with their home visitors to overcome other challenges.
2. Treatment must benefit both mothers and home visitors. The benefits to mothers of improved mood are clear, but we envisioned an approach that would also engage home visitors and enjoin them to be collaborative partners in effective treatment.
3. Minimize burden on home visitors. To do this, masters-level clinicians were selected to deliver treatment. Not only do they have the foundational training required to effectively treat MDD, but bringing in these clinicians allowed home visitors to focus on their primary responsibilities of delivering home visiting curricula.
4. Treatment was to be provided in the home to overcome the primary barrier in obtaining mental health resources in the community.
5. CBT was chosen as the evidence-based treatment. CBT is widely trained in graduate programs (Norcross, Hedges, & Prochaska, 2002) thus facilitating dissemination to other home visiting programs. Also, CBT is theoretically and practically compatible with different home visiting models, thereby ensuring seamless integration and ready adoption.
6. CBT was systematically adapted to meet the needs of mothers participating in home visiting, work effectively in the home, and take full advantage of the opportunity to partner closely with home visitors. In the absence of such adaptations, it would be expected that treatment would go the way of most evidence-based interventions that are moved from highly controlled research settings to the real world—it would likely lose its potency and have limited effectiveness (Westen, Novotny, & Thompson-Brenner, 2004).

Photo: ©iStockphoto.com/sundikova

Depression typically occurs in discrete episodes that can vary in length and severity.

Treatment Components and Adaptations

IH-CBT is organized around specific components and adaptations made to enhance efficacy and facilitate mater-

Photo: ©iStockphoto.com/JackF

Home visiting offers a unique opportunity to reach and engage depressed mothers who would otherwise not receive treatment.

nal engagement in treatment. These are described below.

Treatment Components

IH-CBT is designed for use with mothers 16 years and older who have MDD. Treatment consists of 15 weekly sessions that last about 60 minutes plus a booster session at 1 month post-treatment. The focus and content of treatment primarily target depression reduction. Treatment components include behavioral activation, identification of automatic thoughts and schemas, thought restructuring and reframing, and cognitive rehearsal (Hollon & Dimidjian, 2009). Relapse prevention is the focus in later sessions. The goals of relapse prevention are to reduce the likelihood of additional MDD episodes, delay the onset of the next episode, ensure that a subsequent return of depression is identified early, and entrench learned skills that mothers can apply to facilitate a more rapid recovery. IH-CBT is structured, in that therapists use specific tools and follow a treatment manual. Yet it is also individualized, such that the clinical content of treatment sessions is guided by what is important to mothers in their return to a healthy emotional state. IH-CBT is provided by licensed masters-level mental health professionals who have prior experience in CBT and treating depressed adults, and who have familiarity with serious mental health conditions.

Adaptations to Population

IH-CBT addresses the primary concerns of young, low-income, new mothers who are typically socially isolated (Levy & O'Hara, 2010). Treatment content focuses on issues relevant to this population, such as transition to adult roles, stress management, parenting challenges, and family relationships. For the youngest mothers, additional contextual and developmental issues are incorporated into treatment (e.g., school attendance, living with parents). Given the high prevalence of trauma in depressed mothers (Putnam, Harris, & Putnam, 2013) in home visiting, issues related to trauma (e.g., shame, anger, feelings of inadequacy) are common themes of treatment. Psychiatric comorbidities are addressed but in such a way that depression is the primary focus of treatment.

Adaptations to Home Setting

There are unique challenges in administering mental health treatment in the homes of young, low-income mothers. These require creative solutions and accommodations to ensure effective treatment delivery in environments where privacy is often difficult to guarantee, the child is typically present, and unexpected interruptions occurred. However, providing treatment in the home offers advantages in that many of the clinical issues that are addressed in treatment occurred in the home setting, and the therapist is able to observe elements of the home that may contribute to clinical presentation.

Adaptations to Home Visiting

Collaboration between therapists and home visitors is explicit and planned. By working together outside of sessions and home visits, therapists and home visitors can coordinate efforts ensuring that they are aligning each other's efforts on behalf of the mother and child. Collaboration between therapist and home visitor occurs through written communication, email, and telephone contact. Interim and final reports are prepared by therapists and shared with home visitors. One important factor is that the home visitor attends the 15th session with the mother and therapist. This is an opportunity to review mothers' progress in treatment, identify ways in which home visitors can continue to support mothers after treatment, and celebrate completion of a successful effort. A secondary benefit of integrating IH-CBT into home visiting is to make available to home visitors a mental health professional for consultation. This resource allows home visitors to ask questions and acquire information about mental health issues that may be helpful in working with other mothers who are not in treatment.

Team Approach

Therapists work in teams of 4–6 under the oversight of a doctoral-level team leader and meet weekly for 2 hours. The purpose of the team is to provide a forum to discuss challenging cases, share new learnings and observations, acquire and master CBT skills, maintain fidelity to the IH-CBT approach, and provide support for therapists. Just as home visitors benefit from supervision to avoid drift from home visiting model requirements and to process difficult and emotionally powerful experiences in the home setting, IH-CBT therapists profit from team meetings. Doctoral-level team leaders bring training experiences and familiarity with current developments in the field that enhance the quality and effectiveness of treatment delivery. Team leaders monitor IH-CBT fidelity and listen to audiotapes of treatment sessions to ensure adherence to IH-CBT procedures and to enhance clinician skills.

Empirical Foundation of IH-CBT

Empirical support for IH-CBT was obtained in a clinical trial (Ammerman, Putnam, Altaye, Stevens, et al., 2013; Ammerman, Putnam, Altaye, Teeters, Stevens, & Van Ginkel, 2013) comparing mothers who received IH-CBT and concurrent home visiting with those who received home visiting alone. In this study, 93 mothers were first identified using the

Edinburgh Postnatal Depression Scale (Cox, Holden, & Sagovsky, 1987) administered at 3 months postpartum. This identification was followed by diagnosis of MDD using a semi-structured interview. Following random assignment to treatment or control groups, mothers were re-assessed at post-treatment and at a 3-month follow-up. Results indicated that mothers receiving IH-CBT experienced significant benefits in terms of depression reduction relative to controls. Compared to those receiving home visiting alone, mothers in the IH-CBT condition were less likely to meet diagnostic criteria for MDD at post-treatment (see Figure 1), reported fewer depressive symptoms, and obtained lower scores on clinician ratings of depression severity. Mothers receiving IH-CBT also reported increased social support, improved functioning in day-to-day activities, and decreased psychological distress. Gains were maintained at 3-month follow-up. Findings remained when controlling for other psychiatric conditions, severity of MDD, therapist, home visiting model (Healthy Families America and Nurse-Family Partnership), and number of home visits. It is noteworthy that some mothers in the standard home visiting condition received treatment in the community, although as expected, this was often insufficient or ended prematurely. Mothers received a significantly larger dose of IH-CBT treatment than what is typically observed in center-based mental health settings (11.2 vs. 4.3 sessions). Mothers who completed all sessions of IH-CBT treatment did especially well, with 78.3% no longer meeting criteria for MDD at post-treatment and 90.5% recovered at follow-up. Mothers who recovered from depression reported increased ability to cope with stress related to the parenting role and more nurturing parenting of their children (Ammerman, Putnam, Altaye, Teeters, Stevens, Zou, & Van Ginkel, 2013).

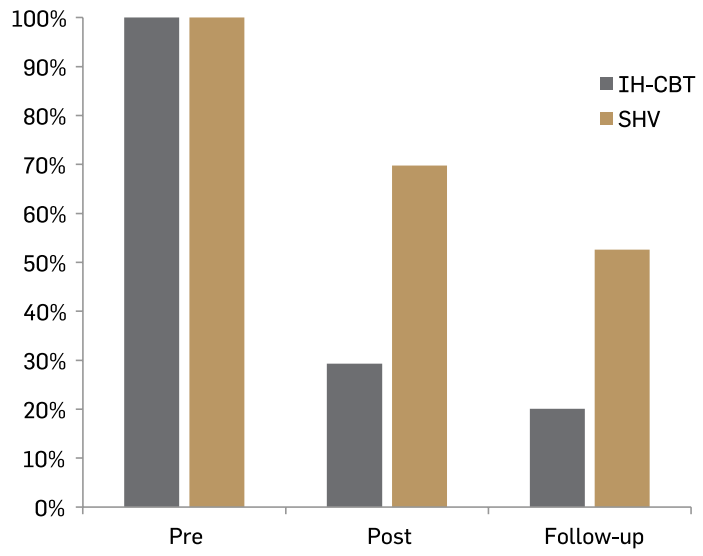
> The primary risk factors for developing depression in pregnancy and postpartum—trauma history, young age, social isolation, educational underachievement—are widely represented among mothers enrolled in home visiting programs.

The importance of the collaboration between the IH-CBT therapist and home visitor was striking in this research. Feedback from both mothers and home visitors highlighted the value of the working relationship between therapists and home visitors. For example, one home visitor noted "The therapist kept in contact with me from the beginning to the end of sessions, and she was clear about the services she was providing and how I would be involved." Mothers were enthusiastic about the convenience of having treatment provided in the home setting. Several mothers noted the "hard work" of psychotherapy, but acknowledged its ultimate value. When asked what she thought other mothers should know before beginning treatment, one mother said "They need to be willing to make a change in their life before it will get better," and another suggested that "To get the most out of therapy you have to take personal risks and go outside of your comfort zone."

The synergy between IH-CBT treatment and home visiting was further demonstrated in a study of predictors of post-treatment outcome. Ammerman, Peugh, Putnam, and Van Ginkel (2012) examined the degree to which clinical and service parameters predicted low scores on a depression screen at post-treatment among mothers receiving IH-CBT. Young maternal age, fewer episodes of MDD, lower depression severity at pre-treatment, lower levels of symptoms of personality disorders, and more treatment sessions and home visits predicted lower levels of depression. When considered in combination, number of home visits and number of IH-CBT sessions emerged as most strongly predictive of improvement. Mothers largely asymptomatic at post-treatment received 58% more home visits during the treatment interval in contrast to those mothers ending with residual depressive symptoms. Clearly, the combined efforts of IH-CBT therapists and home visitors contribute to robust improvements in maternal depression.

Figure 1. Percentage of Mothers Meeting Diagnostic Criteria for Major Depressive Disorder

Percentage of mothers in In-Home Cognitive Behavioral Therapy (IH-CBT) and Standard Home Visiting (SHV) groups meeting diagnostic criteria for major depressive disorder at pre-treatment, post-treatment, and 3-month follow-up.



Going to Scale: The Moving Beyond Depression Program

In order to disseminate IH-CBT to other home visiting programs, we established the Moving Beyond Depression™ (MBD) program. MBD is designed to facilitate adoption of IH-CBT treatment. It contains elements that promote implementation and sustainability, including establishing an infrastructure for screening, identification, and data collection; creating partnerships between home visiting programs and mental health resources that will provide therapists; training and oversight of home visitors and IH-CBT therapists; program evaluation and continuous quality improvement; and mastery of skills and full integration into home visiting programs.

Establishing an Infrastructure

The first step in deploying MBD in a home visiting program is to establish an infrastructure that will support a system of identification, referral, and treatment. Many

Photographer: Michelle K. Rummel

Sallymae (with her child Serena) learned how to manage her depression from the collaboration between her IH-CBT therapist Amy and her home visitor Molly.

home visiting programs have multiple sites that use different home visiting models. These sites must agree on a common measure for depression screening and consistent rules for identifying potentially eligible mothers, a centralized process for referring mothers to treatment, procedures for allowing therapists and home visitors to work closely together and communicate on a regular basis, and a data coordination system to allow program evaluation and continuous quality improvement. These issues are examined and resolved via telephone and on-site meetings. An implementation plan is prepared for the home visiting site in advance by MBD staff and shared with program leadership for refinement. The plan includes and incorporates MBD procedures, local considerations and procedures, process maps, key contacts and their responsibilities, and timetables for each phase of the program's roll out.

Learn More

Moving Beyond Depression
www.movingbeyonddepression.org

Every Child Succeeds
www.everychildsucceeds.org

Urban Institute, Information on Depression in Low Income Women
www.urban.org

SAMSHA Toolkit for Family Service Providers Including Home Visitors
Substance Abuse and Mental Health Services Administration. (in press). *Depression in Mothers: More Than the Blues—A Toolkit for Family Services Providers.* Rockville, MD: SAMHSA.

MedlinePlus, National Institutes of Health and National Library of Medicine
www.nlm.nih.gov/medlineplus

National Network of Depression Centers
www.nndc.org

Training and Ongoing Support

Both home visitors and therapists are trained separately. Therapists and team leaders attend 2 days of training to learn IH-CBT. Training includes didactics, review of audiotapes and videotapes, assessment procedures and interpretation of clinical measures, handling of challenging situations, collaboration with home visitors, and role-playing. Prior to or shortly after IH-CBT training, therapists are asked to attend an intensive workshop on CBT in order to further immerse themselves in CBT principles and prepare them for providing treatment in a challenging and nontraditional setting. Therapists see three pilot cases prior to full launch of the program. Audiotapes of treatment sessions are reviewed by the MBD team for fidelity to the IH-CBT model and adherence to CBT principles and practices. Home visitors are trained on site. Training addresses perinatal depression and its impact on mothers, children, and home visiting; screening and identification; presenting treatment and engaging mothers; and collaborating with therapists. Ongoing support is provided to home visitors, program leadership, and therapists and team leaders through scheduled telephone calls.

Screening and Referral

Home visitors identify potentially eligible mothers through scheduled screenings using one of several self-report depression measures (Rush, First, & Blacker, 2008). The home visitor then presents the program to mothers who receive scores at or above a predetermined cutoff. This stage is especially important as home visitors must engage mothers in the possible benefits of treatment while also addressing questions and concerns. These concerns include assumptions about treatment that may be inaccurate, stigma, or prior poor experiences with the mental health system, among others. If mothers are interested in participating in IH-CBT treatment, a referral is made to the therapist. Scores on screening measures need to be recorded in a centralized data system so that program leadership can monitor rates of screening, proportion of mothers who are eligible, and whether or not interested mothers are consistently referred.

Clinical Assessment

Interested mothers receive a pre-treatment clinical assessment consisting of a diagnostic interview and mothers' completion of several measures addressing trauma history, social support, and parenting stress. The purpose of the assessment is to confirm that mothers meet diagnostic criteria for MDD, identify other forms of psychological distress, and establish baseline levels of emotional and social functioning prior to treatment. The clinical assessment is also a time for therapists to educate mothers about depression, answer questions, and allay concerns about treatment. Assessment data is stored in a centralized data system and used to evaluate the impact of IH-CBT treatment at the site. Assessment measures are re-administered after the 15th session at post-treatment in order to determine change.

Treatment and Collaboration

IH-CBT sessions are scheduled so as not to interfere with ongoing home visiting. Therapists strive to communicate with home visitors weekly, even if it only involves a brief update. A written mid-treatment summary is prepared for home visitors that presents key issues being addressed in treatment. Collaboration centers on how the therapist

and home visitor can help each other and work on shared issues in such a way that mothers are fully supported throughout treatment. Therapists and home visitors communicate directly during crises and transitions, such as unanticipated moves or domestic violence. The home visitor attends the 15th treatment session during which a written treatment summary (which has been prepared by both the mother and therapist) is shared with the home visitor. This joint session is a time when the mother's gains and achievements are noted and celebrated, and ways in which the home visitor can support the mother in the future are reviewed. A booster session is provided 1 month later to establish gains and promote continued improvement.

Maintenance

At the end of IH-CBT treatment, home visitors play an essential role in maintaining treatment gains. Home visitors remind mothers to use skills learned in treatment or help mothers identify when they might be experiencing a return of depressive symptoms so that they can seek treatment resources early, before a full relapse occurs. Following the end of treatment, some mothers may choose to seek additional treatment for psychiatric conditions that remain.

Dissemination of MBD

Since 2008, MBD has been disseminated to a number of different programs (see box Dissemination of Moving Beyond Depression). These dissemination efforts included training and support of 36 masters-level therapist and 12 doctoral-level team leaders; more than 425 mothers treated with IH-CBT to date; implementation in more than 10 different types of home visiting models; and treatment provided with ethnically and racially diverse populations living in urban, rural, and suburban settings. To our knowledge, this is the most extensive dissemination to date of a cross-model, evidence-based enhancement specifically designed for home visiting.

We have learned a number of lessons in the dissemination of MBD. Some of these demonstrate the versatility of the IH-CBT approach and its broad appeal. First, IH-CBT has been equally effective with different racial and ethnic groups and nationalities. The cognitive model fits well into different personal and cultural world views. Feedback from several mothers noted that the structure of IH-CBT contrasts favorably with prior treatment experiences that were perceived as looser and open-ended. Second, implementation of IH-CBT has been seamlessly integrated into different home visiting models. As anticipated, the overarching approach of IH-CBT is compatible with the format and approach of divergent home visiting models. The use of depression measures to identify eligible mothers aligns with Maternal, Infant, and Early Childhood Home Visiting directives to regularly screen mothers for depression. Third, home visitors are pleased to have a treatment option for depressed mothers as they were otherwise frustrated when identifying depression through screening and having few viable resources for obtaining evidence-based treatment.

Challenges have also been encountered. Home visitors are very busy and balance multiple demands in implementing complicated curricula with high-need and low-resource families. Consistent screening, identification, and referral are difficult for some home visitors under these circumstances. Continuous quality improvement approaches, such as generating process maps to uncover vulnerable steps in the identification to referral progression, and careful collection and review of process flow are needed to ensure smooth implementation of MBD procedures. We have learned that some therapists are uncomfortable providing treatment in the home setting, preferring the professional environment of the office or clinic. Pre-screening for this attribute is essential to avoiding therapist turnover. Yet, some turnover of home visitors and therapists is inevitable and requires replacement and new training to maintain quality implementation and fidelity to the overall treatment program. As is often the case with new programs, maintaining consistent and stable funding is a challenge that must be met with creative blended and braided funding strategies.

Scaling up of MBD has also revealed common clinical issues and complications that must be considered in IH-CBT treatment, most notably intimate partner violence, which is strongly associated with depression. Maintaining therapeutic focus on depression and its management in the context of ongoing safety issues is a challenge that must be adequately addressed. Mothers in home visiting may face acute crises, such as impending eviction, loss of income, or urgent health needs. These, too, must be tackled without becoming the focus of IH-CBT treatment. In center-based mental health care these crises would likely lead to "no shows" or cancelled appointments, but when treatment is delivered in the home there is greater likelihood that the session will actually take place. This regularity provides opportunities for highly meaningful and effective intervention even though it is sometimes difficult to balance acute needs with higher level therapeutic goals. Psychiatric crises (e.g., suicidality) also require careful attention. Both the team meetings and ongoing training and support calls provide forums for addressing these needs while maintaining a focus on enhancing coping and mood management skills.

Dissemination of Moving Beyond Depression

The following timeline describes the dissemination of Moving Beyond Depression (MBD).

2008
- Connecticut—Nurturing Families Network
- 23 home visiting sites serving 5 counties

2010
- Boston, MA—Boston Home Visiting Collaborative (United Way of Massachusetts Bay and Merrimack Valley)
- 6 home visiting sites serving Allston-Brighton and adjacent communities

2011
- Kentucky—Health Access Nurturing Development Services Program
- Home visiting sites serving 50 counties

2013
- Kansas—Kansas Maternal, Infant, and Early Childhood Home Visiting Program
- 5 home visiting sites serving Wyandotte County

2013
- Massachusetts—Massachusetts Moving Beyond Depression: Massachusetts Home Visiting Initiative
- 8 home visiting sites serving 15 urban centers and environs

Conclusion and Implications

Recognition of the problem of depression among mothers in home visiting has greatly increased in recent years. In 2011, Golden, Hawkins, and Beardslee reviewed available programs for depressed mothers in home visiting and highlighted "the promise of home visiting as a platform not only for reaching and identifying depressed mothers, but also for serving them" (p. 20). Since that time, important progress has been made in developing evidence-based approaches to treatment (Ammerman, Putnam, Altaye, Stevens, et al., 2013; Beeber et al., this issue, p. 35) and prevention (Perry, Tandon, Edwards, & Mendelson, this issue, p. 45) of depression in the home visiting setting. We have described one of these approaches, IH-CBT, that has recently been nationally disseminated through the MBD program. With half of

mothers in home visiting reporting clinically elevated levels of depressive symptoms, and more than one third meeting criteria for the psychiatric diagnosis of MDD, this is an enormous issue that requires a coordinated and focused response from policymakers and mental health practitioners. Successfully treating depressed mothers in home visiting holds the potential to boost program outcomes, alter the developmental trajectories of children, and protect the sizable public investment in early childhood initiatives.

Robert T. Ammerman, *PhD, is professor of pediatrics at Cincinnati Children's Hospital Medical Center, University of Cincinnati College of Medicine, and scientific director, Every Child Succeeds. His research interests include enhancement of home visiting programs to improve outcomes for mothers and children, elucidating the impact of maternal depression and its treatment on mother and child outcomes, and engaging fathers in home visiting. He is the recipient of grants from the National Institute of Mental Health, National Institute of Child Health and Development, and National Institute on Disability and Rehabilitation Research.*

Frank W. Putnam, *MD, is professor of psychiatry at the University of North Carolina at Chapel Hill. From 1999 to 2011, he was professor of pediatrics and director of the Center for Safe and Healthy Children at Cincinnati Children's Hospital Medical Center, University of Cincinnati College of Medicine. Prior to that, he directed a research program on the psychobiological effects of maltreatment at the National Institutes of Health for 20 years. His current research interests include the dissemination of interventions for the prevention and treatment of child abuse.*

Angelique R. Teeters, *PsyD, is currently a postdoctoral fellow at Cincinnati Children's Hospital Medical Center. Dr. Teeters' research interests include enhancing early childhood home visiting programs with a focus on maternal and infant mental health, the impact of trauma on parenting and child development, and retention in home visiting. She is a recent Early Career Home Visiting Research Scholar awarded by the Home Visiting Research Network.*

Judith B. Van Ginkel, *PhD, is president of the regional Every Child Succeeds home visiting program which she co-founded 15 years ago, and professor of pediatrics at Cincinnati Children's Hospital Medical Center, University of Cincinnati College of Medicine. Hallmarks of the program include documented outcomes, use of quality improvement strategies in a community setting, and a return on investment for public and private sector funders. Her work has focused on the development of public policy to support initiatives for women and children and the application of social enterprise in the public sector.*

Acknowledgments

Supported by Grants R34MH073867 and R01MH087499 from the National Institute of Mental Health. The authors acknowledge the participation and support of Interact for Health, United Way of Greater Cincinnati, Kentucky Health Access Nurturing Development Services program, Ohio Help Me Grow, and www.OhioCanDo4Kids.org. We thank Michelle Rummel for her assistance in preparing the article. For more information please contact Robert T. Ammerman, PhD, Cincinnati Children's Hospital Medical Center, 3333 Burnet Avenue, ML3015, Cincinnati, OH 45229, E-mail: robert.ammerman@cchmc.org, Tel: 513-636-8209.

References

Ammerman, R. T., Peugh, J. L., Putnam, F. W., & Van Ginkel, J. B. (2012). Predictors of treatment response in depressed mothers receiving In-Home Cognitive Behavioral Therapy and concurrent home visiting. *Behavior Modification, 36*, 462–481.

Ammerman, R. T., Putnam, F. W., Altaye, M., Stevens, J., Teeters, A. R., & Van Ginkel, J. B. (2013). A clinical trial of In-Home CBT for depressed mothers in home visitation. *Behavior Therapy, 44*, 359–372.

Ammerman, R. T., Putnam, F. W., Altaye, M., Teeters, A. R., Stevens, J., & Van Ginkel, J. B. (2013). Treatment of depressed mothers in home visiting: Impact on psychological distress and social functioning. *Child Abuse & Neglect, 36*, 544–554.

Ammerman, R. T., Putnam, F. W., Altaye, M., Teeters, A. R., Stevens, J., Zou, Y., & Van Ginkel, J. B. (2013, November). *Recovery from depression and changes in parenting and child behavior in new mothers.* Paper presented at the 2013 Perinatal Mental Health: Optimizing Maternal Treatment to Improve Infant Outcomes Conference, Chicago.

Ammerman, R. T., Putnam, F. W., Bosse, N. R., Teeters, A. R., & Van Ginkel, J. B. (2010). Maternal depression in home visiting: A systematic review. *Aggression and Violent Behavior, 15*, 191–200.

Ammerman, R. T., Putnam, F. W., Stevens, J., Bosse, N. R., Short, J. A., Bodley, A. L., & Van Ginkel, J. B. (2011). An open trial of In-Home CBT for depressed mothers in home visitation. *Maternal and Child Health Journal, 15*, 1333–1341.

Bagner, D. M., Pettit, J. W., Lewinsohn, P. M., & Seeley, J. R. (2010). Effect of maternal depression on child behavior: A sensitive period? *Journal of the American Academy of Child and Adolescent Psychiatry, 49*, 699–707.

Beck, J. S. (2011). *Cognitive behavior therapy: Basics and beyond* (2nd ed). New York, NY: Guilford.

Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *BDI-II Manual.* San Antonio, TX: The Psychological Corporation.

Beeber, L. S., Schwartz, T. A., Holditch-Davis, D., Canuso, R., Lewis, V., & Matsuda, Y. (2014). Interpersonal psychotherapy with a parenting enhancement adapted for in-home delivery in Early Head Start. *Zero to Three, 34* (5), 35–44.

Cox, J. L., Holden, J. M., & Sagovsky, R. (1987). Detection of postnatal depression. Development of the 10-item Edinburgh Postnatal Depression Scale. *British Journal of Psychiatry, 150*, 782–786.

Duggan, A. K., Berlin, L. J., Cassidy, J., Burrell, L., & Tandon, S. D. (2009). Examining maternal depression and attachment insecurity as moderators of the impacts of home visiting for at-risk mothers and infants. *Journal of Consulting and Clinical Psychology, 77*, 788–799.

Easterbrooks, M. A., Bartlett, J. D., Raskin, M., Goldberg, J., Contreras, M. M., Kotake, C., Chaudhuri, J. H., & Jacobs, F. H. (2013). Limiting home visiting effects: Maternal depression as a moderator of child maltreatment. *Pediatrics, 132*, S126–S133.

Garner, A. S. (2013). Home visiting and the biology of toxic stress: Opportunities to address early childhood adversity. *Pediatrics, 132*, S65–S73.

Golden, O., Hawkins, A., & Beardslee, W. (2011). *Home visiting and maternal depression: Seizing the opportunities to help mothers and young children.* Washington, DC: The Urban Institute.

Hoffman, S. G., Asmundson, G. J. G., & Beck, A. T. (2013). The science of cogntive therapy. *Behavior Therapy, 44*, 199–212.

Hollon, S. D., & Dimidjian, S. (2009). Cognitive and behavioral treatment of depression. In I. H. Gotlib & C. L. Hammen (Eds.), *Handbook of depression* (2nd ed.; pp. 586–603). New York, NY: Guilford.

Huybrechts, K. F., Palmsten, K., Mogun, H., Kowal, M., Avorn, J.,...Hernández-Díaz, S. (2013). National trends in antidepressant medication treatment among publicly insured pregnant women. *General Hospital Psychiatry, 35*, 265–271.

Klein, D. N., Arnow, B. A., Barkin, J. L., Dowling, F., Kocsis, J. H., Leon, A. C.... Wisniewski, S. R. (2009). Early adversity in chronic depression: Clinical correlates and response to pharmacotherapy. *Depression and Anxiety, 26*, 701–710.

Levy, L. B., & O'Hara, M. W. (2010). Psychotherapeutic interventions for depressed, low-income women: A review of the literature. *Clinical Psychology Review, 30*, 934–950.

McFarlane, E., Crowne, S. S., Burrell, L., & Duggan, A. (2014). Home visiting service delivery and outcomes for depressed mothers. *Zero to Three, 34* (5), 53–60.

Myers, E. R., Aubuchon-Endsley, N., Bastian, L. A., Gierisch, J. M., Kemper, A. R., ...Sanders, G. D. (2013, April). Efficacy and safety of screening for postpartum depression. *Comparative Effectiveness Review, 106*, AHRQ Publication No. 13-EHC064-EF. Rockville, MD: Agency for Healthcare Research and Quality.

Norcross, J. C., Hedges, M., & Prochaska, J. O. (2002). The face of 2010: A Delphi Poll on the future of psychotherapy. *Professional Psychology: Research and Practice, 23*, 316–322.

Pearson, R. M., Evans, J., Kounali, D., Lewis, G., Heron, J., Ramchandani, P. G., O'Connor, T.G., & Stein, A. (2013). Maternal depression during pregnancy and the postnatal period: Risks and possible mechanisms for offspring depression at age 18 years. *JAMA Psychiatry, 70*, 1312–1319.

Perry, D. F., Tandon, S. D., Edwards, K., & Mendelson, T. (2104). Preventing perinatal depression through home visiting: The Mothers and Babies Course. *Zero to Three, 34* (5), 45–51.

Putnam, K. T., Harris, W. W., & Putnam, F.W. (2013). Synergistic childhood adversities and complex adult psych*opathology*. Journal of Traumatic Stress, 26, 435–442.

Rush, A. J., Jr., First, M. B., & Blacker, D. (2008). *Handbook of psychiatric measures* (2nd ed.) Washington, DC: American Psychiatric Publishing.

Teeters, A. R., Ammerman, R. T., Shenk, C. E., Putnam, F. W., & Van Ginkel, J. B. (2014, February). *Depression trajectories in mothers in home visiting.* Poster presented at the Fourth National Summit on Quality in Home Visiting Programs, Washington, DC.

Westen, D., Novotny, C. M., & Thompson-Brenner, H. (2004). The empirical status of empirically supported psychotherapies: Assumptions, findings, and reporting in controlled clinical trials. *Psychological Bulletin, 130*, 631–663.

Facilitating Mental Health Intervention in Home Visiting

Learning From Content, Context, Clients, and Community

SARAH KYE PRICE
LISA A. GRAY
DALIA EL-KHOURY
Virginia Commonwealth University

More than 10 years ago, several hundred Healthy Start projects around the country gathered for their annual grantee meeting. The "buzz" among project administrators in 2003 surrounded the newly mandated perinatal depression screening component of the federal Healthy Start program. Home visiting programs such as Healthy Start serve women and families where resources are scarce, insurance coverage is limited, and for whom there are barriers to traditional health and mental health services. So, it was not surprising that grantees from around the country began to discover that symptoms of depression were widely prevalent in the women and families served in their programs. The challenge that emerged at that meeting remains relevant today: How can home visiting programs facilitate mental health intervention for women and families?

As one of those Healthy Start project directors, I[1] was keenly aware of the importance of facilitating dialogue, building knowledge, and adapting interventions for women and families in home visiting. The rural project I directed had received a perinatal depression grant award from the Health Resources and Services Administration 2 years prior to augment the existing Healthy Start program. For a year, this project had implemented universal perinatal depression screening in five rural counties and found that more than half of women had clinical or just marginally sub-clinical levels of depression (Price & Proctor, 2009). Several other real-life lessons had also hit home: women wanted to receive mental health support from the home visiting program's workers, women faced significant barriers and stigma seeking services in traditional community mental health settings where staff tried to refer them, and there was a significant overlap between the stresses of daily life experienced by home visiting clients and their depressive symptoms. It was clear that mental health interventions were needed and desired; the program had to add a second "Women's Wellness" staff member after just 6 months. It was also clear that one intervention would not fit all needs and that women's help-seeking varied between effective, desirable, and available sectors of care (Price, 2010). I learned early on that facilitating meaningful mental health intervention within home visiting programs would require a multifaceted

[1] *Throughout this article, "I" refers to Sarah Kye Price*

Abstract

Home visiting programs recognize the importance of promoting women's mental health during and around the time of pregnancy. However, the process of planning and integrating mental health promotion and intervention into the home visiting setting can seem daunting. Using examples and lessons learned from research and practice, the authors provide a framework for facilitating mental health interventions in home visiting. This article discusses conceptual and practical considerations which can assist home visiting programs to facilitate mental health intervention, including intervention content, service delivery context, client perspectives, and community engagement.

approach, with many researchers, practitioners, and administrators jointly contributing to the knowledge base around interventions and services.

Over the past decade, the field of perinatal mental health has expanded considerably. Research has focused not only on prevalence, but on the implementation and translation of mental health interventions into home visiting programs. Home visiting programs in several states have now integrated mental health screening, promotion, and intervention along with other home visiting services. Mental health interventions have been adapted and translated to be effectively replicated specifically in home visiting. I have conducted some of my own research, kept informed about the development of other people's research, and studied the policies that impact the ways in which mental health interventions can be delivered (and paid for) in the real-world lives of home visiting programs. The most important thing I do, though, is to facilitate conversations among home visiting program staff, community leaders, mental health experts, and policymakers in order to openly wrestle with this dilemma of what it means to meaningfully facilitate mental health intervention into home visiting. In this manuscript, we highlight pearls of wisdom from research and practice to continue to move this conversation forward, encouraging all home visiting programs to facilitate mental health interventions through integrating content, context, clients, and community.

Content: What Works and Why

Home visiting programs provide an ideal setting and resource for promoting mental health in low-income women who experience a double-dose of risk: having a greater likelihood of experiencing perinatal depression while also navigating significant barriers to traditional mental health care and services (Hatcher, Rayens, Peden, & Hall 2008; Leis, Mendelson, Perry, & Tandon, 2011; Mayberry, Horowitz, & Declercq, 2007; Price, 2010; Rafferty, Griffin, & Robokos, 2010). Researchers working in partnership with home visiting programs have developed and tested clinical intervention models rooted in interpersonal psychotherapy (IPT) and cognitive–behavioral therapy (CBT), specifically enhancing these interventions for delivery in home visiting settings.

IPT reinforces the attachment and relationship-based support offered through many home visiting programs. Beeber and colleagues (2004) designed an in-home intervention led by psychiatric nurses that has been shown to effectively reduce depressive symptoms and negative child outcomes in low-income Latina mothers enrolled in an Early Head Start program. The intervention is based on four IPT case modules that exhibit typical client problems and offer strategies for increasing access to social support, improving problematic life issues, enhancing parenting, and managing symptoms of depression. The model was recently enhanced to include depression-specific parenting enhancement materials which demonstrated positive results in the reduction of depressive symptoms and an increase in positive involvement with their child (Beeber et al., 2013).

CBT, another primary form of intervention, focuses on creating thought and behavior changes in the individual. This approach builds on learning-based theories that often are the foundation for parenting training and health education components within home visiting. Ammerman and colleagues (Ammerman et al., 2013; Ammerman et al., 2010; Ammerman et al., 2011) developed a 15 session in-home CBT intervention delivered by licensed social workers and mental health clinicians that has been tested and found to be effective in reducing psychological distress and increasing social support among low-income women participating in maternal and child health home visiting programs. Tandon and colleagues (2011) also demonstrated efficacy of a brief in-home preventive intervention delivered through a modified six-session intervention grounded in the core concepts of CBT.

Additional research by Segre and colleagues (2010) has used Listening Visits as the basis of intervention, building on the trusted interpersonal exchanges between home visitors and their clients as a foundation for alleviating symptoms of depression. Their research has successfully translated this nurse-led, empirically supported intervention for the treatment of depression from the United Kingdom to paraprofessionals in the U.S. working with new mothers enrolled in home visiting programs. This important addition to the literature supported the value and benefit of interventions that can potentially be facilitated by home visiting staff members, rather than licensed mental health professionals.

Similarly, we have been working in Virginia to develop and test the Enhanced Engagement (EE) model delivered by the home visiting team (Gray & Price, 2012). EE provides a structured yet flexible framework for conducting assessments and delivering targeted interventions that center around commonly identified life stressors of low income women (Gray & Price, 2012). EE uses four thematic modules (understanding and coping with depression, adapting to parenting, relationship conflict, and grief and loss) which apply the working components of IPT and CBT through strengths-based dialogues that build the client's emotional capacity and promote mental health.

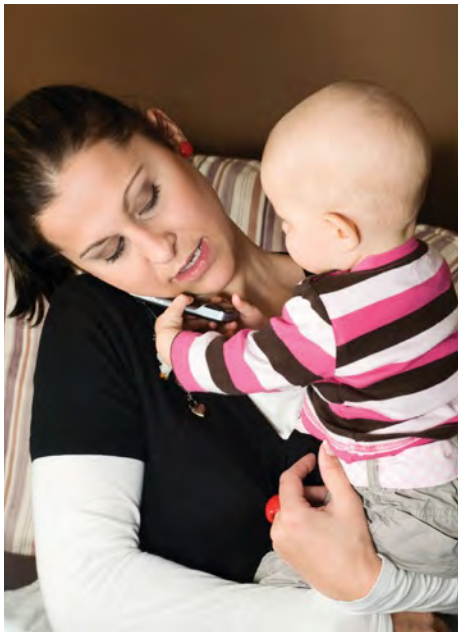


Photo: ©iStockphoto.com/JoPhil

There was a significant overlap between the stresses of daily life experienced by home visiting clients and their depressive symptoms.

Although much more can be said about each one of these specific interventions, the content expertise in published studies and ongoing "promising practices" research suggests that there are an array of effective, evidence-based interventions that have been designed or adapted specifically for implementation in home visiting programs. The tool box is ready, and there are experts and trainers with skills who are willing to help expand these interventions into other home visiting programs and communities. Researchers and home visiting programs can effectively partner to enhance services, as well as to continue to expand knowledge about what interventions work most effectively in particular communities, populations, or client situations.

Content Pearl of Wisdom

There is no need to start from scratch, or reinvent the wheel. There is an evidence base of effective mental health interventions that can be delivered in the home visiting setting. IPT, CBT, Listening Visits, and motivational interviewing have all been adapted for home visiting and can be implemented effectively in diverse communities and settings. Review and discuss these research-based strategies and promising innovations to help determine how one or more could fit within the home visiting program(s) in your community.

Photo: ©iStockphoto.com/JackF

Mental health interventions have been adapted and translated to be effectively replicated specifically in home visiting.

Context: No Place Like Home

The context in which mental health services are offered is important to consider, along with content. Whenever possible, the setting for mental health interventions should match the setting for other services that are provided: the home of the client. Even with this goal, it will not be possible to offer all levels of mental health services in the home context, so the home can also be a setting to provide education and engage women and families into community mental health treatment when needed. The most important value-added of addressing mental health in the context of home visiting is trust: The home visitation program is based on a trusting, in-home relationship in which the whole person is valued and a holistic approach to prevention and parenting support can be offered. This relationship makes home visiting a particularly important context in which to discuss mental health and to promote mental health service usage.

The federal Maternal, Infant, and Early Childhood Home Visiting program (U.S. Department of Health and Human Services, n.d.) emphasizes the importance of evidence-based models of home visiting. This program encourages home visiting programs to focus on defining and implementing what really works to improve parenting, health, school readiness, and family engagement for those enrolled in home visiting programs and services. Facilitating mental health interventions within home visiting can also benefit from this renewed emphasis on defining both what works and how it works. Consider, for example, the basis of the home visiting program's own theory of change. How does a home visiting program work in order to improve parenting? Do home visiting modules focus on parent–child attachment? Interpersonal communication? Relationship-based care? These may be areas where IPT intervention shares common attributes with the home visiting modules, and this "goodness of fit" can offer a natural extension for staff development. Similarly, does the home visiting program teach behavioral change strategies, weighing of costs and benefits, or restructuring one's idea of parenting to include adaptive strategies that promote child development? These cognitive, learning-based approaches often used within home visiting provide an excellent introduction to learning mental health promotion techniques common to both motivational interviewing and CBT.

To inform the EE intervention (Gray & Price, 2012) the research team took deliberate care to consider the home visiting program model's theoretical grounding. The home visiting agency partners followed the evidence-based Parents as Teachers parenting curriculum, which is grounded largely in attachment theory. The agency also placed equal emphasis on providing health education and client-informed goal setting and decision-making. The brief mental health intervention that emerged in this partnership included two modules based in IPT that were relationship-based (grief and loss, relationship challenges) and two that were based in CBT (adapting to new parenting, coping with depression). Selection of the modules involved a brief motivational interviewing component to select the best fit topically and theoretically. Training and staff development were planned to emphasize ways that discussing and intervening for mental health promote the other goals of the home visiting program as well. Staff members were also provided with opportunities for relaxation, stress management, and honest conversations about mental health in their lives, families, and workplace during their professional development. When a home visiting program wishes to facilitate mental health intervention in a nonstigmatizing way, the whole program needs to embrace mental health as a component of each staff member and client's health and wellness.

Context Pearl of Wisdom

The best mental health intervention in any home visiting program should be a natural extension of the overall home visiting program. Too often, mental health has been considered an "add on" when mental health promotion is really a holistic component of self-care and parenting. When facilitating mental health intervention in the home visiting setting, consider the most important components of the home visiting model and create a strong match between those components and the interventions that you deliver, the agencies to which you refer clients, and the conversations that you have about mental health. It can help to add "sticky note" reminders of places where it might be natural to talk about mental health promotion even in the context of standard home visits. The more the context of home visiting can be used to positively educate and dialogue about mental health promotion, the more likely it will be for clients to engage in mental health intervention when needed.

Clients: The Meaning of Mental Health in Women's Lives

Facilitating mental health intervention in maternal and child health home visiting programs also requires an understanding of the client perspective. Untreated perinatal depression can have particularly detrimental consequences for vulnerable populations, including low-income women, women of color, and single mothers (Abrams & Curran, 2007). It is imperative to understand the perspectives

of these groups in order to address mental health on the client's own terms. Professional empathy allows home visiting providers to step inside the world in which women who are served by home visiting live and experience their struggles, joys, challenges, and successes. Researchers also engage in qualitative inquiry with home visiting clients and staff members in order to better understand the themes that are part of the meaning and experience of depression in women's lives. This knowledge can heighten empathy and lead to more consumer-focused interventions and services.

Postpartum depression prevalence rates in the year following birth are as high as 21.9% (Wisner et al., 2013). Higher rates are present among single mothers, women with low degrees of social support, and women with lower levels of educational attainment (Abrams & Curran, 2007). African-American women and members of other minority groups are more likely to exhibit a higher level of symptoms (Wisner et al., 2013). In addition, low socioeconomic status plays a role in the development of postpartum depression (Abrams & Curran, 2007; Tandon et al., 2011). Predictors of postpartum depression include prenatal depression, self-esteem, stress around child care, prenatal anxiety, general life stress, lack of social support, marital discord, a history of depression, temperament of the infant, marital status, socioeconomic status, and whether the pregnancy was planned (Boland-Prom & MacMullen, 2012). In addition, one in every four currently parenting women in the United States has also experienced a prior pregnancy loss (Price, 2006). The home visiting experience takes on a unique contextual meaning for women with prior perinatal loss or emergent mental health needs, craving empathetic response from the home visiting program.

Mothers may hold idealized, unrealistic beliefs about what it means to be a happy or effective mother. This, in turn, may render some mothers reluctant to disclose or acknowledge depressive symptoms (Abrams & Curran, 2007). This reluctance to seek formal mental health services may also be exacerbated by a mistrust of the formal mental health system in the U.S. (Sampson, Zayas & Seifert, 2013). Clients who are recent immigrants or are from non-Western cultures may have heightened mistrust which can be reinforced by a lack of responsiveness from traditional mental health service providers (Abrams & Curran, 2007). In addition, a lack of awareness or knowledge about the interconnections among stress and depression may develop into a barrier to treatment (Sampson et al., 2013).

Stigma combined with barriers to care and services may render women from racial and ethnic minority groups particularly vulnerable to the effects of untreated depression (Sampson et al., 2013). Undiagnosed and untreated perinatal depression can have a negative impact on the mother, her children (particularly related to the development of insecure attachment), and family. In their grounded theory analysis, Abrams, Dornig, and Curran (2009) identified formal help-seeking barriers that exist across individual, community, and provider levels. Specifically, these barriers interfered at the levels of thinking about symptoms (i.e., accurately identifying or admitting to symptoms), seeking advice (mediated by an anticipation of stigma associated with mental illness), and rejecting formal care, particularly related to a preference for self-help.

Photo: ©Stockphoto.com/coloroftime

Mothers may hold idealized, unrealistic beliefs about what it means to be a happy or effective mother.

Service provider silence may keep women from discussing their symptoms of depression, as well as their reproductive loss histories; both of these are important considerations in home visiting. Byatt et al. (2013) revealed that women experiencing perinatal loss fear feeling invalidated, judged, and even traumatized by health care providers. In comparison, perinatal health care providers described women as being unwilling to discuss prior grief and mental health concerns. This disconnect creates tension between the individual experiences and societal perceptions of depression and loss (Price, 2008). In order to facilitate mental health interventions, it is important to understand the language and beliefs surrounding grief, loss, and depression used by home visiting clients and how these might differ from the language and descriptions that home visiting staff or mental health providers have learned. Facilitating mental health intervention requires sharing a common language or, at the very least, learning to translate between groups.

Our own qualitative research with home visiting programs identified several resonant themes. Women revealed that depression was a personal and community reality, a consistent and ever-present aspect of their daily lives. Women perceived situational depression as a normal life event, but wanted to talk about depression, grief, or loss in their lives in order to lessen the situational intensity. There was a distinction between acknowledging stress or life events that may feel like depression, and being personally labelled as "depressed" (Price & Cohen-Filipic, 2013). However, women in our study also separated out the daily situations that made them "feel depressed" with the way in which they observe, in themselves and others, that sometimes depression rises to a level where it has to be treated differently because it does not improve when the situation changes. Sampson, Zayas, and Seifert (2013) argued that the attribution of depressive symptoms to ordinary stressors can be a potential barrier to treatment of postpartum depression. Addressing this concern, a consistent finding between both home visiting staff and home visiting clients in our study was that several different approaches (or "tiers") of intervention were likely necessary in order to adequately respond to the needs of a wide range of women in home visiting programs, from managing situational distress to knowing when treatment of depression through therapy, psychopharmacology, or both was warranted (Price & Cohen-Filipic, 2013).

Photo: ©iStockphoto.com/geotrac

Build on a strengths-based approach that recognizes that women want to be mentally healthy and psychosocially well in order to care for themselves and their children.

Client Pearl of Wisdom

Research and practice suggest that the most effective interventions are those which use the words, language, and perceptions that resonate with clients. Talk with clients, and include client representatives in the discussion of mental health integration in home visiting. Build on a strengths-based approach that recognizes that women want to be mentally healthy and psychosocially well in order to care for themselves and their children. Talk with women about the kind of services they would seek, or that they would recommend for a neighbor. Include their words and language in informational program materials. Allowing clients to "own" mental health can reduce stigma and may facilitate the use of mental health services and supports both in the home visiting program and community.

Community: Maximizing Resources and Targeting System Change

The final consideration in facilitating mental health intervention in home visiting programs is community. One of the most frequent and understandable concerns that arises is the lack of mental health services and resources available in any given community. We have never known a community rich with high-quality, low-cost, accessible mental health resources for pregnant and postpartum women. The availability, accessibility, and affordability of mental health interventions and services are wide-spread concerns. However, ignoring depressive symptoms in home visiting clients does not mean that these symptoms cease to exist. When a home visiting client is struggling with her mental health, she is probably struggling with her parenting, her health behaviors, her relationships, her motivation, and her follow-through on appointments, too. The best way to begin to address gaps in mental health services is to build up a community-level response.

Community coalitions to address mental health in home visiting should include as many home visiting programs as serve the community, representative(s) from the public community mental health agency, local private practitioners that will bill for services through Medicaid, members of consumer advocacy groups such as National Alliance on Mental Illness and Postpartum Support International as well as members of local universities in departments such as social work, nursing, psychology, human services, medicine, and pharmacy. Always ask members invited to the coalition to add the name of at least one other person they believe should be at the table; the goal is to get as many people as possible concerned about the mental health of pregnant and postpartum women in the same place, at the same time. A goal in community-level response to mental health is to not overlap or duplicate services, but instead to build reciprocal referral relationships and identify gaps. For example, if there is a free clinic where medication management is offered already, do not duplicate this service. Try to be as specific in identifying gaps as possible (e.g., certain zip code areas, places where public transportation does not visit, specific clusters of symptoms or diagnoses without a specialty provider). The more specific your community can be in defining what resources exist, and which do not exist, the more assertive the coalition can be in advocating for changes in policy, billing, or even in attracting a needed specialty provider. The home visiting provider can consider what services are best to refer to, and what services might need to be directly provided either through a collaborative arrangement or independently by the program. Just as it is not helpful for a woman experiencing depression to " go it alone," there is no need for a home visiting program to attempt to meet all the needs of the community single-handedly either.

In Virginia, home visiting programs have a statewide consortia among their leadership, and there are also a number of local consortia groups as well. Members of the consortia are considering approaches to perinatal mental health as well as infant mental health within the statewide group, and the goal is to work together to identify gaps that couple be amendable to statewide policy and advocacy. Virginia's home visiting programs have been successful in garnering funding and in producing presentations and publications surrounding these collectiveefforts. One of the most important lessons I have taken in as a member of this group is that it's not just about my research, or the other person's research, or even about any one home visiting program or model. This group is about working together to advance the quality and accessibility of home visiting, including mental health as one component of what makes all the programs stronger. This means that the members have to work together diligently, be patient in the pursuit of multiple and simultaneous priorities, and trust each other in the process.

Community Pearl of Wisdom

Community coalitions are a good way to break down tasks of reviewing potential interventions, sharing the costs associated with training staff, and developing evaluation plans jointly with academic colleagues. Consider the lasting impact of the mental health interventions in your community and spend time defining how your home visiting program fits into the existing gaps in the community and can avoid duplicating services and training or professional development that might already be available.

Learn More

Urban Institute
www.urban.org/publications/412316.html
Report on home visiting and maternal depression

Urban Institute
www.urban.org/publications/412933.html
Report on linking depressed mothers to effective services and supports

National Institutes of Mental Health
www.nimh.nih.gov/health/publications/women-and-depression-discovering-hope/index.shtml
Women and Depression: Discovering Hope

Virginia Home Visiting Consortium
http://homevisitingva.com
Includes links to statewide home visitor trainings on topics related to mental health integration

Conclusion: Where to Go From Here

The following is a summary of the steps that this review of research and practice recommend for smoothly facilitating the integration of mental health and responding holistically to the needs of women served through home visiting:

1. Choose the best intervention content for the fit of your home visiting program, integrating the mental health interventions that will also augment the most important goals and attributes of your specific home visiting program.
2. Review your existing program components and find opportunities to build staff comfort and capacity regarding mental health through ongoing professional development.
3. Consider the specific ways in which depression and mental health manifest in your client population, what words your clients use to describe their mental health, and what intensity of interventions may be needed for the families you serve.
4. Bring community partners to the table for planning as well as implementation, including academic partners who can move findings into the existing evidence needed in order to collaboratively build research and practice knowledge.

Sarah Kye Price, *PhD, MSW, MS, is associate professor and PhD program director in the School of Social Work at Virginia Commonwealth University. She has worked with home visiting programs in both Missouri and Virginia to facilitate the integration of mental health services into the context of home visiting. She is past project director of the Women's Wellness Initiative of Missouri Bootheel Healthy Start, and has worked with local home visiting programs in Virginia to design and evaluate the Enhanced Engagement model of mental health integrated home visiting. She is currently partnering with the Virginia Home Visiting Consortium on their Maternal, Infant, and Early Childhood Home Visiting Program funded expansion grant, implementing behavioral health integrated centralized intake in communities across the state.*

Lisa A. Gray, *MSSW, is a licensed clinical social worker and doctoral candidate in the School of Social Work at Virginia Commonwealth University. She has direct practice experience as a perinatal social worker, child protection worker, and child and family therapist. Her current research interest is in the area of women and children's mental health among military families. Lisa served as the project coordinator for the Enhanced Engagement project.*

Dalia El-Khoury, *MEd, is a doctoral candidate in the School of Social Work at Virginia Commonwealth University. Her research interests include access to mental health services for racial and ethnic minorities, with a specific focus on individuals from the Middle East. She has previously worked as a technical assistance liaison, providing national trainings on Social Security work incentives for individuals with disabilities.*

References

Abrams, L. S., & Curran, L. (2007). Not just a middle class affliction: Crafting a social work research agenda on postpartum depression. *Health and Social Work, 32*(4), 289–296.

Abrams, L. S., Dorning, K., & Curran, L. (2009). Barriers to service use for postpartum depression symptoms among low-income ethnic minority mothers in the United States. *Qualitative Health Research, 19*, 535–551.

Ammerman, R. T., Putnam, F. W., Altaye, M., Teeters, A. R., Stevens, J., & Van Ginkel, J. B. (2013). Treatment of depressed mothers in home visiting: Impact on psychological distress and social functioning. *Child Abuse & Neglect, 37*(8), 544–554. doi:10.1016/j.chiabu.2013.03.003

Ammerman, R. T., Putnam, F. W., Bosse, N. R., Teeters, A. R., & Van Ginkel, J. B. (2010). Maternal depression in home visitation: A systematic review. *Aggression and Violent Behavior, 15*, 191–200.

Ammerman, R. T., Putnam, F. W., Stevens, J., Bosse, N. R., Short, J. A., Bodley, A. L., et al. (2011). An open trial of in-home CBT for depressed mothers in home visitation. *Maternal and Child Health Journal, 15*, 1333–1341. doi:10.1007/s10995-010-0691-7.

Ammerman, R. T., Putnam, F. W., Stevens, J., Holleb, L. J., Novak, A. L., & Van Ginkel, J. B. (2005). In-home cognitive behavior therapy for depression: An adapted treatment for first-time mothers in home visitation. *Best Practices in Mental Health, 1*(1), 1–14.

Beeber, L. S., Holditch-Davis, D., & Belyea, M. J. (2004). In-home intervention for depressive symptoms with low-income mothers of infants and toddlers in the United States. *Health Care for Women International, 25*(6), 561–580.

Beeber, L. S., Schwartz, T. A., Holditch-Davis, D., Canuso, R., Lewis, V., & Wilde Hall, H. (2013). Parenting enhancement, interpersonal psychotherapy to reduce depression in low-income mothers of infants and toddlers. *Nursing Research, 62*(2), 82–90.

Boland-Prom, K. W., & MacMullen, N. (2012). Expanding the postpartum depression construct using a social work paradigm. *Journal of Human Behavior in the Social Environment, 22*(6), 718–732.

Byatt, N., Biebel, K., Friedman, L., Debordes-Jackson, G., Ziedonis, D., & Pbert, L. (2013). Patient's views on depression care in obstetric settings: How do they compare to the views of perinatal health care professionals? *General Hospital Psychiatry, 35*(6), 598–604. doi: http://dx.doi.org/10.1016/j.genhosppsych.2013.07.011

Gray, L. A. & Price, S. K. (2012). Partnering for mental health promotion: Implementing evidence based mental health services within a maternal and child home health visiting program. *Clinical Social Work Journal*. doi:10.1007/s10615-012-0426-x

Hatcher, J., Rayens, M. K., Peden, A. R., & Hall, L. A. (2008). Predictors of depression for low-income African American single mothers. *Journal of Health Disparities Research and Practice, 2*(3), 89–110.

Leis, J. A., Mendelson, T., Perry, D. F., & Tandon, S. (2011). Perceptions of mental health services among low-income, perinatal African-American women. *Women's Health Issues, 21*(4), 314–319. doi:10.1016/j.whi.2011.03.005

Mayberry, L. J., Horowitz, J. A., & Declercq, E. (2007). Depression symptom prevalence and demographic risk factors among U.S. women during the first 2 years postpartum. *Journal of Obstetrical Gynecological and Neonatal Nursing, 36*, 542–549.

Price, S.K. (2006). Prevalence and correlates of pregnancy loss history in a national sample of children and families. *Maternal and Child Health Journal, 10*(6), 489–500.

Price, S. K. (2008). Women and reproductive loss: Client-worker dialogues designed to break the silence. *Social Work, 53*(4), 367–376. doi:10.1093/sw/53.4.367

Price, S. K. (2010). Women's use of multi sector mental health services in a community- based perinatal depression program. *Social Work Research, 34*(3), 145–155.

Price, S. K., & Cohen-Filipic, K. (2013). Daily life or diagnosis? Dual perspectives on perinatal depression within maternal and child health home visiting. *Social Work in Public Health, 28*(6), 554– 565. doi:10.1080/19371918.2011.592087

Price, S. K., & Proctor, E. K. (2009). A rural perspective on perinatal depression: Prevalence, correlates, and implications for help-seeking among low-income women. *Journal of Rural Health, 25*(2), 158–166. doi:10.1111/j.1748-0361.2009.00212.x

Rafferty, Y., Griffin, K. W., & Robokos, D. (2010). Maternal depression and parental distress among families in the early head start research and evaluation project: Risk factors within the family setting. *Infant Mental Health Journal, 31*(5), 543–569.

Sampson, M., Zayas, L. H., & Seifert, S. B. (2013). Treatment engagement using motivational interviewing for low-income, ethnically diverse mothers with postpartum depression. *Clinical Social Work Journal, 41*, 387–394.

Segre, L. S., Stasik, S. M., O'Hara, M., & Arndt, S. (2010). Listening visits: An evaluation of the effectiveness and acceptability of a home-based depression treatment. *Psychotherapy Research, 20*(6), 712–721.

Tandon, S. D., Perry, D., Mendelson, T., Kemp, K., & Leis, J. (2011). Preventing perinatal depression in low-income home visiting clients: A randomized controlled trial. *Journal of Consulting and Clinical Psychology, 79*(5), 707–712.

U.S. Department of Health and Human Services. (n.d.). *Maternal, Infant, and Early Childhood Home Visiting Program*. Retrieved from http://mchb.hrsa.gov/programs/homevisiting

Wisner, K. L., Sit, D. K., McShea, M. C., Rizzo, D. M., Zoretich, R. A., Hughes, C. L., … Hanusa, B. H. (2013). Onset timing, thoughts of self-harm, and diagnoses in postpartum women with screen-positive depression findings. *JAMA Psychiatry, 7*(5), 490–498.

Interpersonal Psychotherapy With a Parenting Enhancement Adapted for In-Home Delivery in Early Head Start

LINDA S. BEEBER
TODD A. SCHWARTZ
University of North Carolina at Chapel Hill

DIANE HOLDITCH-DAVIS
Duke University

REGINA CANUSO
New York State Council on Children and Families, Rensselaer, New York

VIRGINIA LEWIS
YUI MATSUDA
University of North Carolina at Chapel Hill

Abstract

Formidable barriers prevent low-income mothers from accessing evidence-based treatment for depressive symptoms that compromise their ability to provide sensitive, responsive parenting for their infant or toddler. Interpersonal psychotherapy (IPT), an evidence-based psychotherapy for depression, was tailored for in-home delivery to mothers navigating economic hardship and other intense stressors, and for Latina mothers with limited English language proficiency. Psychiatric-mental health nurses delivered the adapted IPT in randomized clinical trials that were conducted in partnership with Early Head Start (EHS). The authors discuss the results of these studies and the impacts on EHS staff members and programs, and they provide additional implications for current early childhood-focused programs.

Strong evidence has shown that depressive symptoms in a low-income mother can intensify the negative effects of economic hardship on the infant or toddler (Campbell et al., 2004; Campbell, Matestic, von Stauffenberg, Mohan, & Kirchner, 2007; Campbell, Morgan-Lopez, Cox, & McLoyd, 2009; Goodman et al., 2011; Knitzer, 2007; Mistry, Vandewater, Huston, & McLoyd, 2002; National Institute of Child Health and Human Development Early Child Care Research Network, 1998, 1999; National Research Council & Institute of Medicine, 2009; Tucker-Drob, Rhemtulla, Harden, Turkheimer, & Fask, 2011). The current question is not whether to intervene to reduce maternal depressive symptoms promptly, but how, given the compelling barriers posed by economic hardship and the stigma of having mental health issues. Home visiting programs that provide family support and child development enrichment for low-income and high-risk families are ideal vehicles for delivering mental health care because their mission is usually not stigmatizing, and the delivery organizations are trusted entities in the communities they serve (Sweet & Appelbaum, 2004).

If mental health care is embedded in a family- and child-focused home visiting program, the mother and child can benefit from mental health treatment that is delivered "under the radar" of family and community members who might respond judgmentally to a mother's need for treatment (Beeber, Cooper et al., 2007). This article will focus on an in-home adaptation of an evidence-based treatment for maternal depressive symptoms that was developed and tested with Early Head Start (EHS) programs in the southeastern and northeastern U.S. The results of these randomized clinical trials (RCTs) have

Photo: ©iStockphoto.com/Anpet2000

Depressive symptoms were a barrier to the full implementation of EHS family support and child development interventions.

been reported elsewhere (Beeber, Holditch-Davis, Belyea, Funk, & Canuso, 2004; Beeber et al., 2010; Beeber et al., 2013), but provide a limited description of the complex process of embedding such an intervention in EHS. In this article, we will describe how we enhanced interpersonal psychotherapy with an accompanying parenting enhancement component that focused on depressive symptoms (IPT+PE), how the intervention was adapted to fit variations in EHS programs, and the results of successive RCTs. We conclude with the policy, administrative, and staff supports that were essential and the role of programs like EHS in providing embedded mental health care.

Adaptation of IPT

IPT was developed for research purposes as a time-limited treatment for depression (Klerman & Weissman, 1993) that has subsequently been refined and tested in multiple clinical trials. On the basis of the assumption that depression occurs in social and interpersonal contexts, IPT focuses on the client's patterns in current interpersonal relationships, identification of problematic relationships, and enactment of changes in the "ways a [client] feels, thinks, and acts in problematic interpersonal relationships" (Klerman & Weissman, 1993, p. 11) that relate directly to the current symptoms of depression. IPT is divided into three phases: (a) a diagnostic evaluation, (b) psychotherapeutic work to enact strategies to change a single interpersonal problem area, and (c) a consolidation of therapeutic gains in the last part of the therapy. Originally, four interpersonal problem areas were used: grief or complicated bereavement, interpersonal role disputes, role transitions, and interpersonal deficits. In keeping with the time-limited structure, the focus for the entire treatment is on the interpersonal problem area deemed to be most closely associated with the current episode of depression or elevated symptoms. Later iterations of IPT have shortened or changed the interpersonal problem areas (Swartz et al., 2008), shifted the focus to other disorders (Markowitz, Milrod, Bleiberg, & Marshall, 2009), or adapted IPT to specific populations such as low-income women (Grote, Swartz, & Zuckoff, 2008) or women during pregnancy and the postpartum period (O'Hara, 2009). IPT was seen as especially efficacious for perinatal depression because of the potential for disputes arising from disrupted interpersonal relationships and difficulties in transition to the motherhood role (O'Hara, 2009; Stuart, O'Hara, & Gorman, 2003).

A meta-analysis of 38 studies of IPT included 4,356 patients and demonstrated effectiveness with clients demonstrating clinical depression and elevated depressive symptoms that were measured with a standard screening instrument (Cuijpers et al., 2011). More than half of the studies had adapted IPT to fit the needs of different populations, shortened the number of sessions, or changed the format from individual to group therapy. Thirteen countries were represented, as were a variety of populations and specific target groups. Overall, IPT was found to be an effective psychotherapeutic treatment for depression and depressive symptoms with equal efficacy to cognitive behavioral therapy (CBT), an evidence-based, depression-specific therapy, and only slightly less effective than selective serotonin uptake inhibitor antidepressants. Adaptations of the original IPT manual for selected populations appeared to be more effective than adherence to the original manualized version (Cuijpers et al., 2011).

IPT Plus Parenting Enhancement

When we began to develop a maternal depressive symptom intervention with EHS in 1997, the existing studies on in-home intervention for depression were limited and focused exclusively on the immediate postpartum era (Wickberg & Hwang, 1996). Of these studies, only one evidence-supported, depression-specific psychotherapy (CBT) had been used in the home. In the U.K., Appleby, Warner, Whitton, and Faragher (1997) had mixed results from four RCTs of in-home CBT related to a high dropout rate in the group receiving either antidepressant medication only or the highest intensity treatment (CBT plus medication). These results resonated with our interviews with mothers who warned us that they had limited energy for psychotherapy (Swartz et al., 2006) and were reluctant to take antidepressants (Chabrol, Teissedre, Armitage, Danel, & Walburg, 2004). IPT fit the difficulties expressed by EHS mothers and was more acceptable to them than antidepressant therapy. IPT shared the same foundation as the theory guiding relationally based interventions conducted by psychiatric mental health nurses who delivered the IPT (Beeber, 2000; Peplau, 1952). We used advanced practice psychiatric mental health nurses (master's-prepared) because EHS provided home visiting by nurses as part of a broadly focused EHS health promotion plan. A nurse visiting the home would not require the mother to reveal her mental health needs and thus would reduce stigma (Beeber, Cooper, et al., 2007). IPT had been adapted to different populations, but not to in-home delivery (Klerman & Weissman, 1993; Stuart et al., 2003). There was no guidance about how to adapt IPT for low-income populations, mothers with very low social support, single earner-single parent mothers, or rapidly acculturating Latina mothers in EHS programs in the southeastern U.S. Therefore, we examined each theoretical and strategic component of IPT in the context of our focus groups, interviews, and survey data from EHS mothers and families.

Mothers reported significant severe depressive symptoms that were accompanied by other health problems, interpersonal conflicts, financial problems, and work role strain. Depressive symptoms limited their energy and hampered their use of the EHS parent resources, and the time required

to meet day-to-day survival needs and difficulty in getting someone to watch the children were barriers to attending mental health clinics. Mothers emphasized that home visiting which allowed privacy, flexible meeting schedules, and choice of strategies would meet their needs better than traditional mental health services. We also learned that recruitment and screening for depressive symptoms could be done only with the involvement of EHS home visiting staff. In our initial efforts to reach depressed mothers, we sent depression screening forms to mothers by mail. Only 1% of mothers in a single EHS program replied. When we involved EHS home visitors in the screening and recruitment effort, the rate increased dramatically to 70%.

Once we determined that mothers, their partners, and kin and EHS administrative and home vising staff had to be the primary sources of information for the IPT adaptation, we used an iterative process to integrate rich descriptive data from mothers into the four foci of IPT (Klerman & Weissman, 1993). We developed personalized modules for each of the four foci that combined mothers' descriptive phrases with IPT strategies written at a 4th-grade reading level and a picture of the mother with her child. We devised a visual depressive symptoms assessment tool that organized the mother's symptoms around a pie shape allowing her to see the symptoms and put them outside her as the first step in gaining control over them. Mothers with low literacy were able to use the interactive visual assessment tool to indicate whether symptoms were getting worse or better. These changes in symptoms could then be addressed by the mother and the nurse.

The IPT adaptation needed to include mothers from diverse ethnic and cultural backgrounds; living in rural, urban, or suburban settings; who were native-born and recent arrivals to the U.S.; and who spoke English or Spanish exclusively. Personalizing the modules with the mother's picture with her child was a key tailoring strategy that avoided stereotypical graphics based on race or culture. When we adapted the materials for newly immigrated Spanish-speaking mothers, we needed to translate the idiom-rich language of the original materials into culturally acceptable and conceptually equivalent Spanish language forms. We conducted multiple forward and backward translations of the materials with EHS Latina mothers, their partners, and EHS Latino staff until the English idioms and confusing phrases were replaced with equivalent phrases in Spanish that conveyed the IPT content. Partners and kin were asked about their reaction to the messages as well as the acceptability of the materials.

Photo: ©iStockphoto.com/dereieb

Parenting enhancement built on the positive behaviors and perceptions that the mother had toward her child.

A large percentage of the English-speaking EHS mothers were living without partners (63%). To adapt IPT to mothers who were single parents, primary earners for their family, or who had no supporting partner or kin, we deemphasized taking on the sick role and stepping back from role obligations (Klerman & Weissman, 1993). Fathers were present in the home as married or unmarried partners (86% of the Latina mothers lived with a male partner, most often the father of the EHS child), as non-residing biological fathers, and non-biological surrogate fathers to a mother's child. We created a set of modules that involved fathers, partners, or kin that paralleled those for the mother.

Finally, we learned from our preintervention interviews with mothers and EHS program staff that depressive symptoms were a barrier to the full implementation of EHS family support and child development interventions. EHS staff gave rich descriptions of doing home visits with depressed mothers whose energy was so low and distractibility so high that the EHS staff would have to abbreviate or abandon curriculum materials. EHS staff expressed frustration about mothers who missed or cancelled visits or who were unable to use the books, toys, or parenting enhancement materials. One home visitor recalled:

Week after week, I would arrive for my visit with [the mother]...she would sit on the couch in the same soiled sweatpants...she would watch [child] like he was on a TV show but do nothing spontaneously to engage him in play or conversation...on the TV would be the pile of books I had brought on previous visits with materials on how to read to him...the books were obviously untouched because they had dust on them! She was so sad and so low energy. I felt like my heart was breaking and I was frustrated and angry at myself because I could not see how any of the curriculum materials I was using were helping her at all...

We concluded that to fully achieve benefits for the child, we would need to add a parenting enhancement that focused on the way in which the depressive symptoms were preventing the mother from fully engaging with her infant or toddler in a sensitive, responsive, consistent manner. The next section describes this adaption of IPT in more detail.

Development of a Parenting Enhancement

When we began to develop the parenting enhancement to IPT, there was strong observational evidence supporting two patterns by which depressive symptoms impaired mothering: by blunting or slowing the mother's response; or by provoking irritable and intrusive responses (Hammen, 1991). Both interaction styles had been shown to break the contingency of cue-and-response that promotes learning (Hammen, 1991; Rosenblum, Mazet, & Bénony, 1997). We used the rich observational data to develop the parenting enhancement.

Blunting had been observed to shorten and reduce the frequency of interactions with the child (Field, 1995; Karl, 1995; Lyons-Ruth, Connell, Grunebaum, & Botein, 1990; Watson & Ramey, 1972), limit touch (Stepakoff, Beebe, & Jaffe, 2000), and reduce

sensitivity (Murray, Fiori-Cowley, Hooper, & Cooper, 1996; Zeanah, Boris, & Larrieu, 1997). In some mothers, blunting was so severe that their actions no longer corresponded to the cues given by the infant or toddler (Bettes, 1988; Breznitz & Sherman, 1987; Field, 1995; Field et al., 1988; Rosenblum et al., 1997; Rutter & Quinton, 1984), impairing mothers' ability to sooth the infant (Zuckerman, Bauchner, Parker, & Cabral, 1990) and regulate the toddler's activity (Goodman, Brogan, Lynch, & Fielding, 1993; Needlman, Stevenson, & Zuckerman, 1991). Mothers talked more slowly and less often with their child (Breznitz & Sherman, 1987; Rosenblum et al., 1997; Zlochower & Cohn, 1996) using flat voice tones (Bettes, 1988; Kaplan, Bachorowski, & Zarlengo-Strouse, 1999) that appeared correlated with impaired language acquisition and attentiveness in the child (Bettes, 1988; Fernald & Kuhl, 1987; Kuhl, 2000). Depressive symptoms also blunted these mothers' expression of joy and positive affect (Rosenblum et al., 1997), diminished game-playing (Field et al., 1988), and dampened their ability to reward the toddler for good behavior (Breznitz & Sherman, 1987). Overall, these interactions appeared to impair learning, emotional expression, and behavioral regulation.

Irritability had been observed along with maternal interactions that were intrusive with rough touch and angry-sounding talk (Cohn, Matias, Tronick, Connell, & Lyons-Ruth, 1986; Cohn & Tronick, 1989; Field, Healy, Goldstein, & Gutherz, 1990; Weinberg & Tronick, 1998). In some mothers, the irritability was accompanied by negative appraisals of the child's behavior and inconsistently meted out consequences (Gross, Conrad, Fogg, & Wothke, 1994; Jaenicke et al., 1987; Kochanska, Radke-Yarrow, Kuczynski, & Friedman, 1987; Murray et al., 1996; Radke-Yarrow, Belmont, Nottelmann, & Bottomly, 1990; Sachs & Hall, 1991). For toddlers, the inconsistency appeared correlated with difficulty in self-regulation (Cicchetti, Rogosch, Toth, & Spagnola, 1997; Davenport, Zahn-Waxler, Adland, & Mayfield, 1984; Field, 1995, 1998a, 1998b).

The two global patterns of blunting and irritable responses became the foundation for the depressive-symptom-focused parenting enhancement that was integrated into the IPT intervention. Two principles were important. First, depressive symptoms needed to be addressed before parenting. Our thinking was that the mother would have more energy to devote to parenting if she had successfully reduced her symptoms. Second, the parenting enhancement needed to be strength-based and build on the positive behaviors and perceptions that the mother had toward her child. This was achieved by reinforcing the mother's strengths as a parent and reminding her that her love for this child was the reason for overcoming the symptoms that stood in her way of being the best parent she could be. Each of the modules we developed reminded the mother to be vigilant and not let her symptoms compromise her watchfulness over the child's safety.

> Recruitment and screening for depressive symptoms could be done only with the involvement of Early Head Start home visiting staff.

We developed three modules: *Making the Most of the Moment (Sacando lo más que se pueda del momento)*, which focused on activating the mother whose interactions were blunted or slowed by depressive symptoms; *Dealing With Negative Behaviors of the Child (Lidiando con el comportamiento negativo del niño)*, which targeted irritable responses; and *Know Yourself, Know Your Child (Conociéndose a sí misma y conociendo a su hijo)*, which helped the mother separate her critical perceptions from her child's actual capabilities. All three modules provided practice in responding sensitively and contingently to the child's cues. The nurse interventionist assessed the mother–child interaction, discussed the findings with the team, and suggested the most appropriate module to the mother on the basis of the assessment. Some mothers did not demonstrate any compromised parenting; one of the modules was used regardless as a strength-building part of the intervention.

The parenting enhancement was designed to bridge the gap between the mother and EHS child enrichment resources. When the mother was learning the parenting enhancement strategies, the nurse encouraged her to use a child development activity that had been provided by EHS (e.g., books) and to reach out to her EHS home visitor for help in parenting. In this way, the parenting enhancement component did not duplicate EHS content but motivated the mother to push past her depressive symptoms and use EHS resources.

Subsequent to the implementation of the parenting enhancement, Forman et al. (2007) verified our observational data with a study that showed that, following reduction of depressive symptoms with IPT, postpartum mothers did not show improvements in their interactions with their infants. This seminal study emphasized the need for additional intervention to help the mother reverse the suboptimal patterns of mothering she had developed while symptomatic. Other studies published after we had implemented our intervention studies showed the value of combining interventions to coach mothers in interactional behavioral change along with depressive symptoms treatment (Cooper, Murray, Wilson, & Romaniuk, 2003; van Doesum, Riksen-Walraven, Hosman, & Hoefnagels, 2008).

Preparation of Nurse Interventionists

Psychiatric mental health advanced practice nurses ("nurses") were ideal interventionists because they are prepared to do mental health assessment and psychotherapy. However, most of the nurses had practiced in traditional mental health settings and had to learn how to maintain the mother's privacy when the session was in earshot of other family members, handle children's reactions to their mother's tears or anger, adhere to therapeutic boundaries without traditional props, stay safe in high-crime neighborhoods, and manage crises and reportable incidents such as child abuse. In this arena, our EHS staff partners were our teachers and participated as consultants to the research team. As in many of the areas with rapid increases in immigration, the southeastern EHS programs with bilingual staff were serving many newly immigrated Latinos. However, there were few bilingual mental health professionals when we began the intervention work. We developed a nurse–interpreter model of IPT delivery to meet the need. Nurses required training and practice in working with interpreters, and co-author Lewis, a certified interpreter, developed an interpreter training program for EHS staff. The model and program have been fully described elsewhere (Beeber, Lewis, Cooper, Maxwell, & Sandelowski, 2009). Finally, the nurses had to become comfortable working with mothers and families coping with the constraints of economic hardship; this aspect required the most intensive adjustments (Beeber & Canuso, 2005). We addressed the nurses' need for cultural sensitization, support, and new skill sets through weekly group reflective supervision conducted by telephone and through periodic retraining. We used the detailed field notes and protocol checklists to monitor the fidelity of the IPT.

Adapting the Intervention

EHS programs are designed to reflect the unique qualities of the communities they serve. Consequently, each of the nine participating EHS programs had different features such as the proportion of families receiving home visiting or the inclusion of Spanish-speaking or other

non-English language speakers. Our pilot work had shown that EHS staff were essential to the recruitment of mothers into the intervention studies, so initially, we trained all EHS staff to offer screening to mothers in their caseloads. EHS staff needed to learn how to introduce the study, secure a written informed consent, administer a screening instrument (Center for Epidemiological Studies Depression Scale; Radloff, 1977), protect the mother's data, and communicate with the research team. We quickly discovered that not all EHS staff could effectively execute these functions and that the online training required by our Institutional Review Board (for the protection of research participants) was difficult for many EHS staff. We applied for special Institutional Review Board permission to create an in-person training program that was tailored for EHS by using training examples that were specific to EHS contexts. Likewise, not all bilingual EHS staff could function as interpreters and work with the nurse to deliver the intervention. We remained flexible and, when needed, trained our research team to perform these functions. Ultimately, we designed and tested a curriculum that prepared EHS staff in the functions we needed (see section "Essential Policy and Administrative Supports").

Adaptations for In-home Delivery

In each trial, the adapted IPT reduced depressive symptoms in less than 2 months, and symptom reduction was maintained. This feature is important because infants and toddlers show negative behavioral change with as few as 6 months of exposure to maternal symptoms (Campbell et al., 2004). Over the studies of in-home IPT +PE completed by the authors (see box What Is the Evidence for Impact?), 75% to 100% of mothers completed a full dose of treatment. An analysis of the study that was done with Latina EHS mothers showed that because of higher retention in treatment, in-home IPT+PE was cost-effective as compared to office-based CBT and at least as cost-effective as antidepressant therapy with low-income mothers (Beil, Beeber, Schwartz, & Lewis, 2013). This result was promising, especially because we were able to demonstrate in the most recent study (see box) that the symptom-focused parenting enhancement resulted in significant, positive changes in mothers' interactions with their child compared to mothers who received an equal number of health education visits delivered in the home by a nurse. This result was a key step in reversing the negative cognitive,

What Is the Evidence for Impact?

Three studies provide evidence for the impact of in-home interpersonal psychotherapy and parenting enhancement (IPT + PE) on maternal depressive symptoms and mother–child interactions.

Study 1

- **Sample:** 16 mothers in 2 Early Head Start (EHS) programs, 1 in Southeastern and 1 in Northeastern U.S.
- **Characteristics**: 63% African American; Average age 26.6 years; Education 4–14 years; 88% living without a partner
- **Results**: Mothers receiving IPT + PE compared to usual EHS care had statistically significant reduction in depressive symptoms at Time 2 (8 weeks after 8 face-to-face sessions) and Time 3 (16 weeks after 8 boosters sessions); there was a trend toward a statistically significant improvement in parenting in the intervention group
- **Read about this study**:

  Beeber, L. S., Holditch-Davis, D., Belyea, M. J., Funk, S. G., & Canuso, R. (2004). In-home intervention for depressive symptoms with low-income mothers of infants and toddlers in the United States. *Health Care Women International, 25*, 561–580. doi:10.1080/07399330490444830

  Beeber, L. S., & Canuso, R. (2005). Strengthening social support for the low-income mother: Five critical questions and a guide for intervention. *Journal of Obstetric, Gynecologic, & Neonatal Nursing, 34*, 769–776. doi:10.1177/0884217505281885

Study 2

- **Sample:** 80 mothers in 3 EHS programs in Southeastern U.S.
- **Characteristics**: 100% newly immigrated Latina; Spanish first language with limited English language proficiency; Average age 26.0 years; Education 2–16 years; 14% living without a partner
- **Results**: Mothers receiving IPT + PE compared to usual EHS care had statistically significant reduction in depressive symptoms at Time 2 (14 weeks after 5 face-to-face sessions and 5 booster sessions) and Time 3 (22 weeks after 5 face-to-face sessions and 5 booster sessions) and Time 4 (26 weeks after 1 month of no treatment); there was no statistical difference in parenting between the two groups
- **Read about this study**:

  Beeber, L. S., Holditch-Davis, D., Perreira, K., Schwartz, T. A., Lewis, V., Blanchard, H., . . . Goldman, B. D. (2010). Short-term in-home intervention reduces depressive symptoms in Early Head Start Latina mothers of infants and toddlers. *Research in Nursing & Health, 33*, 60–76. doi: 10.1002/nur.20363

  Beeber, L. S., Lewis, V. S., Cooper, C., Maxwell, L., & Sandelowski, M. (2009). Meeting the "now" need: PMH-APRN–interpreter teams provide in-home mental health intervention for depressed Latina mothers with limited English proficiency. *Journal of American Psychiatric Nurses Association, 15*, 249–259. doi:10.1177/1078390309344742

  Beil, H., Beeber, L. S., Schwartz, T. A., & Lewis, G. (2013). Cost-effectiveness of alternative treatments for depression in low-income women. *Journal of Mental Health Policy and Economics, 16*, 55–65. Retrieved from http://europepmc.org/abstract/MED/23999203

Study 3

- **Sample:** 226 mothers in 6 EHS programs, 5 in Southeastern and 1 in Northeastern U.S.
- **Characteristics**: 61% African American; Average age 26.0 years; Education 6–19 years; 63% living without a partner
- **Results**: Both IPT + PE and Attention-control (health education visits by a nurse) reduced depressive symptoms at Time 2 (14 weeks after 10 face-to-face sessions) and Time 3 (22 weeks after 4–5 booster sessions) and Time 4 (26 weeks after 1 month of no treatment); IPT+PE mothers had a statistically significant increase in maternal involvement (staying close to the child, making eye contact, expressing positive affect, showing affection and warm touch)
- **Read about this study**:

  Beeber, L. S., Schwartz, T. A., Holditch-Davis, D., Canuso, R., Lewis, V., & Hall, H. W. (2013). Parenting enhancement, interpersonal psychotherapy to reduce depression in low-income mothers of infants and toddlers: A randomized trial. *Nursing Research, 62*, 82–90. doi: 10.1097/NNR.0b013e31828324c2

  Beeber, L. S., Cooper, C., Van Noy, B. E., Schwartz, T. A., Blanchard, H. C., Canuso, R., . . . Emory, S. L. (2007). Flying under the radar: Engagement and retention of depressed low-income mothers in a mental health intervention. *ANS Advances in Nursing Science, 30*, 221–234. doi:10.1097/01.ANS.0000286621.77139.f0

Photo: Stephen Bobb

Early Head Start programs are designed to reflect the unique qualities of the communities they serve.

Learn More

National Institutes of Health/National Institute of Mental Health
www.nimh.nih.gov/health/publications/depression-listing.shtml
Education about depression that can be used with mothers, fathers, and family members; availabbe in Spanish.

Maternal Depression
L. S. Beeber, & R. C. Cohen (2011) In S. J. Summers & R. C. Cohen, (Eds.), Understanding Early Childhood Mental Health: A Practical Guide for Professionals. Baltimore, MD: Brookes Publishing.

Finding Family Strengths in the Midst of Adversity: Using Risk and Resilience Models to Promote Mental Health
C. Monahan, L. S. Beeber, & B. Jones-Harden (2011) In S. Summers & R. C. Cohen (Eds.), Understanding Early Childhood Mental Health: A Practical Guide for Professionals. Baltimore, MD: Brookes.

Intervening With Parents
L. S. Beeber & R. Canuso, R. (2011) In S. Summers & R. C. Cohen (Eds.), Understanding Early Childhood Mental Health: A Practical Guide for Professionals. Baltimore, MD: Brookes Publishing.

A Practical Guide to Reflective Supervision
S. S. Heller & L. Gilkerson (Eds.) (2009). Washington, DC: ZERO TO THREE.

behavioral, and social outcomes for these infants and toddlers.

In the most recent study, we put IPT+PE to a stronger test by trying it out in more EHS programs and comparing it to EHS services plus home visits by a nurse who provided health education for the mothers. Both IPT+PE and health education comparison condition reduced mothers' depressive symptoms. It is plausible that the therapeutic effect of the outreach efforts by the health education nurses combined with the stress reduction effect of the health education were sufficient to reduce depressive symptoms. However, only the mothers who received IPT+PE showed significantly more positive interactions with their child. This finding was a crucial result that needs to be replicated with other high-risk populations such as these EHS mothers where maternal depressive symptoms carry so much importance to the development of the very young child.

Essential Policy and Administrative Supports

Following authorization of EHS by the U.S. Congress in 1994, key scientific and policy innovations paved the way for our program of research in EHS. These were as follows:

- In 1994, authorizing legislation directed that rigorous and continuous evaluation of EHS occur; the EHS Research and Evaluation Project was launched with the first 17 programs (Chazan-Cohen, Roderick Stark, Mann, & Fitzgerald, 2007);
- In 1996, the Head Start Program Performance Standards were revised to include support for optimal parental mental health (Raikes & Love, 2002);
- In 2000, a key report *From Neurons to Neighborhoods* (National Research Council & Institute of Medicine, 2000) called attention to mental health issues in children and across the lifespan;
- In 2000, the EHS Research and Evaluation Project documented that that depression was prevalent in EHS parents, followed by successive reports in 2001 and 2002;
- In 2000, the Infant Mental Health Forum was held at the urging of the EHS Technical Work Group in which broad-based action and policy items were issued; one of the outcomes was the Department of Health and Human Services (DHHS) infant mental health initiative that included support for research to advance infant mental health in EHS;
- In 2001, the DHHS infant mental health initiative launched the Early Prevention and Intervention Research Consortium of five studies testing approaches to improve infant mental health in EHS (Beeber, Chazan-Cohen, et al., 2007).

What is striking about these events is the systematic way in which programmatic, scientific, and policy changes moved together to emphasize the importance of maternal depressive symptoms in the larger context of infant and toddler mental health. Each initiative brought sweeping changes and created fertile ground for our studies testing IPT in EHS to occur. First, as we built the intervention structure to test IPT, the new Head Start performance standards increased motivation of programs to partner with us around maternal depression intervention. The growing interest in infant mental health prompted DHHS to call for proposals through which our adaptation for Latina mothers was funded. The subsequent formation of the Early Prevention and Intervention Research Consortium brought together five national research teams under the leadership of Rachel Chazen-Cohen. Gathering together five multidisciplinary research teams created a richly supportive meta-team where EHS-specific research issues could be solved and the teams could collaborate on shared issues (Malik et al., 2007).

Leadership at each level of the EHS program was essential to the success of the IPT trials. We always formally introduced our projects to the EHS sponsoring agency leadership after informally approaching the EHS program directors and mental health coordinators. EHS program directors were the liaisons to the EHS parent Policy Council who

authorized each research study. The Policy Council looked to the program director for an enthusiastic and confident endorsement which we believed hinged on the respect and transparency with which we presented the project, the flexibility of our implementation procedures, and the clarity with which we responded to concerns. One frequent concern was the requirement of a control condition in which the intervention was withheld from randomly assigned mothers. Program directors and staff were universally negative about this requirement, perceiving that it was unfair to withhold treatment from some mothers and provide it for others. We responded with three statements: we do not know whether this intervention will help—the control group condition protects half the available pool from investing time and energy in treatment that doesn't work; in a scaled-up, fully implemented version, it would be unlikely that every mother could be offered such a service at one time—the wait-list structure provided watchful monitoring with the promise of the intervention for control group mothers; and we promised every control mother the full intervention. Programs were grateful to have mental health services for their mothers, as well as the training that the staff received as incentives to partner with us. In the final study, mothers received the health education condition in which a nurse visited with the same frequency and duration as the intervention condition; programs were much more comfortable with this model. Scientifically, the model is a stronger test of the intervention than a comparison to regular EHS services without additional visits by a nurse. However, this comparison is difficult to implement in a way that is neutral and does not overlap with elements of the intervention.

One asset that our projects brought to programs was enhancement of the skill of EHS staff in identifying, screening, and referring EHS parents who had significant symptoms of depression. Over time, the training programs we created for staff evolved into a manualized curriculum with training and support materials such as staff "Tip Sheets" for identifying, screening, and referring with parents with depressive symptoms. As we completed the IPT trials, we secured funding to test it with two EHS programs (*Alumbrando el camino*/*Bright Moments: A Curriculum for Staff Working With EHS Parents With Depressive Symptoms* (Beeber & Canuso, 2009). The curriculum included an enhanced reflective supervision component to support EHS supervisory staff and video simulations in English and Spanish language using actors to demonstrate optimal behaviors for EHS staff . After completing the curriculum, staff demonstrated greater self-efficacy in approaching, screening, and referring parents with moderate to severe depressive symptoms. Depressed parents who received intervention from staff showed improved interactions with their infant or toddler. By the third year of the curriculum project, the directors of the participating EHS programs reported that screening and referral of parents with depressive symptoms had significantly increased. All participating EHS supervisors developed unique reflective supervision systems that fit their EHS programs.

EHS mental health coordinators were key to the success of the IPT trials; in each site they served as the "point person" for the project. EHS program staff looked to the mental health coordinators for ongoing support and guidance in day-to-day questions as they screened mothers and referred them to the projects. Inherent in the trials was the need to monitor mothers' symptoms to be certain that all mothers and children were safe. The research protocols required that we maintain confidentiality in regard to mothers' participation in the projects. This required that the EHS staff, particularly the mental health coordinators, develop sufficient trust in the research team to detect and safely refer mothers in crisis for help. Within the direct service staff, there were "champions": staff who were the enthusiastic supporters of the project and built staff trust and participation in the studies. These staff had deep insight into the needs of parents and welcomed the opportunity to have tailored services for mothers. Each champion understood the connection between the mother's depressive symptoms and the child's mental health. We were deeply grateful to each of these devoted EHS staff.

Conclusion

We concluded that the adaptation of IPT+PE for in-home delivery was a successful treatment for depressive symptoms and that the addition of parenting enhancement intervention that was focused on how depressive symptoms compromised parenting did not duplicate EHS services. While treatment of severe levels of symptoms would typically be viewed as something to be addressed by mental health resources outside the EHS program, our experience and data suggest the opposite. The mixed results from the final and largest test of IPT+PE showed that intervention that was nonspecific to depression (the control condition; health education) in the context of a relationship and regular visits from the nurse was as effective as the IPT+PE condition in reducing symptoms. However, the mothering interaction improvements only occurred when IPT was used. This is a critical finding because maternal depressive symptoms affect the cognitive, behavioral, and social–emotional development of infants and toddlers. Our preliminary data on the response to the IPT+PE showed that mothers who had mild to moderate levels of depressive symptoms benefitted the most (Beeber & Schwartz, 2010).These data support our initial hypothesis that mothers who were less severely affected might have the energy and focus to make the transformative changes in their interpersonal sources of depressive symptoms as well as in their parenting. Offering more intensive care to less-affected mothers is consistent with the prevention and early intervention thrust of the Affordable Care Act and EHS. Finally, without the full engagement of EHS in shaping the screening, delivery, and supporting structures and in providing the overriding policy and performance standards that support mental health care for parents and children, this program of in-home depression treatment would not have been successful.

Linda S. Beeber, *PhD, PMHCNS, BC, FAAN, is the Frances Hill Fox Distinguished Term Professor in the School of Nursing, University of North Carolina at Chapel Hill. Dr. Beeber has focused on reducing maternal depression and its impact on infants and toddlers. She has specialized in high-risk, low-income mothers and has studied how to tailor, reduce stigma, and embed effective depression treatment into maternal infant–toddler enrichment and support programs such as Early Head Start, the Nurse-Family Partnership, and Early Intervention services for infants and toddlers with developmental delays and disabilities.*

Todd A. Schwartz, *DrPH, is a research associate professor in the Department of Biostatistics, Gillings School of Global Public Health and School of Nursing, University of North Carolina at Chapel Hill. Dr. Schwartz has provided design consultation and statistical analyses for numerous health-related clinical trials and public health initiatives including Dr. Beeber's randomized clinical trials with low-income mothers of infants and toddlers.*

Diane Holditch-Davis, *PhD, RN, FAAN, is the Marcus Hobbs Distinguished Professor of Nursing and the associate dean for research affairs in the School of Nursing, Duke University. Dr. Holditch-Davis has conducted observational studies of parent–child interactions and infant sleep to determine long-term health and developmental outcomes of infants, particularly those who are premature, adopted, seropositive for HIV, medically fragile, or the children of low-income, depressed mothers. As part of her studies, Dr. Holditch-Davis has refined methods to study mother–infant behavioral interactions in the home and hospital environments, and designed*

the methods used in the studies described in this article.

Regina Canuso, *MS, PMHCNS-BC. is coordinator, Hard to Place Children's Unit, New York State Council on Children and Families, Rensselaer, NY. Ms. Canuso is a psychiatric – mental health clinical nurse specialist with years of expertise in providing mental health intervention with mothers, infants, and toddlers. In Early Head Start, she served as a center nurse, a disabilities coordinator and, ultimately, as the mental health coordinator. She was a national Head Start Fellow and currently works with at-risk children. As the field expert, Ms. Canuso contributed to the design and implementation of the interventions delivered to depressed mothers.*

Virginia Lewis *works in the School of Nursing, University of North Carolina at Chapel Hill. Ms. Lewis served as the project director on several of Dr. Beeber's studies where, as a bilingual specialist in Latino culture and community partnerships, she co-designed and implemented the nurse–interpreter model used to deliver the intervention to Spanish-speaking mothers. She served as the community liaison for many of the clinical trials described in this article.*

Yui Matsuda, *PhD, RN, is a postdoctoral fellow in the School of Nursing, University of North Carolina at Chapel Hill. Dr. Matsuda has studied family planning decision-making in Latino couples and currently works with Dr. Beeber on the influence of maternal mental health issues in health decision-making. As a trilingual specialist in community health issues, she is also studying health services usage and the influence of stress and mental health issues on Latina mothers' use of Early Intervention services.*

Acknowledgments

The studies cited in this paper were funded by the University of North Carolina at Chapel Hill School of Nursing; the National Institutes of Health, National Institute of Mental Health, R01MH065524; DHHS/Administration for Children and Families/Early Head Start University Partnership grants 90YF0042 and 90YF0056. We deeply appreciate the work of the psychiatric mental health advanced practice nurses, the generalist nurses, the research staff, the staff of the collaborating Early Head Start programs, and the mothers who taught us how to help them. Dr. Matsuda was supported by a postdoctoral fellowship from the National Institutes of Health, National Institute of Nursing Research (T32).

References

Appleby, L., Warner, R., Whitton, A., & Faragher, B. (1997). A controlled study of fluoxetine and cognitive-behavioural counselling in the treatment of postnatal depression. *BMJ: British Medical Journal, 314,* 932–936. doi:10.1136/bmj.314.7085.932

Beeber, L. S. (2000). Hildahood: Taking the interpersonal theory of nursing to the neighborhood. *Journal of the American Psychiatric Nurses Association, 6*, 49–55. doi:10.1016/S1078-3903(00)90020-X

Beeber, L. S., & Canuso, R. (2005). Strengthening social support for the low-income mother: Five critical questions and a guide for intervention. *Journal of Obstetric, Gynecologic, & Neonatal Nursing, 34*, 769–776. doi:10.1177/0884217505281885

Beeber, L. S., & Canuso, R. (2009). *Alumbrando el camino/Bright Moments: A curriculum for staff working with EHS parents with depressive symptoms*, DHHS/ACF/ACYF 90YF0056 Head Start-University Partnership grant. A 3 year project to implement and test two methods of delivery of a curriculum in English and Spanish language to educate EHS staff to identify, screen, refer and support depressed parents. An additional reflective supervision component for EHS staff and supervisors was implemented to support the curriculum [unpublished data, raw].

Beeber, L. S., Chazan-Cohen, R., Squires, J., Harden, B. J., Boris, N. W., Heller, S. S., & Malik, N. M. (2007). The early promotion and intervention research consortium (E-PIRC): Five approaches to improving infant/toddler mental health in Early Head Start. *Infant Mental Health Journal, 28*, 130–150. doi:10.1002/imhj.20126

Beeber, L. S., Cooper, C., Van Noy, B. E., Schwartz, T. A., Blanchard, H. C., Canuso, R., . . . Emory, S. L. (2007). Flying under the radar: engagement and retention of depressed low-income mothers in a mental health intervention. *ANS Advances in Nursing Science, 30*, 221–234. doi:10.1097/01.ANS.0000286621.77139.f0

Beeber, L. S., Holditch-Davis, D., Belyea, M. J., Funk, S. G., & Canuso, R. (2004). In-home intervention for depressive symptoms with low-income mothers of infants and toddlers in the United States. *Health Care Women International, 25*, 561–580. doi:10.1080/07399330490444830

Beeber, L. S., Holditch-Davis, D., Perreira, K., Schwartz, T. A., Lewis, V., Blanchard, H., . . . Goldman, B. D. (2010). Short-term in-home intervention reduces depressive symptoms in Early Head Start Latina mothers of infants and toddlers. *Research in Nursing & Health, 33*, 60–76. doi: 10.1002/nur.20363

Beeber, L. S., Lewis, V. S., Cooper, C., Maxwell, L., & Sandelowski, M. (2009). Meeting the "now" need: PMH-APRN–interpreter teams provide in-home mental health intervention for depressed Latina mothers with limited English proficiency. *Journal of American Psychiatric Nurses Association, 15*, 249–259. doi:10.1177/1078390309344742

Beeber, L., & Schwartz, T. (2010, June). *Responses of Early Head Start mothers to an in-home, depressive symptom intervention.* Head Start's 10th National Research Conference, Washington, DC.

Beeber, L. S., Schwartz, T. A., Holditch-Davis, D., Canuso, R., Lewis, V., & Hall, H. W. (2013). Parenting enhancement, interpersonal psychotherapy to reduce depression in low-income mothers of infants and toddlers: A randomized trial. *Nursing Research, 62*, 82–90. doi: 10.1097/NNR.0b013e31828324c2

Beil, H., Beeber, L. S., Schwartz, T. A., & Lewis, G. (2013). Cost-effectiveness of alternative treatments for depression in low-income women. *Journal of Mental Health Policy and Economics, 16*, 55–65. Retrieved from http://europepmc.org/abstract/MED/23999203

Bettes, B. A. (1988). Maternal depression and motherese: Temporal and intonational features. *Child Development, 59*, 1089–1096. Retrieved from http://www.jstor.org/stable/1130275

Breznitz, Z., & Sherman, T. (1987). Speech patterning of natural discourse of well and depressed mothers and their young children. *Child Development, 58*, 395–400. Retrieved from www.jstor.org/stable/1130516

Campbell, S. B., Brownell, C. A., Hungerford, A., Spieker, S. I., Mohan, R., & Blessing, J. S. (2004). The course of maternal depressive symptoms and maternal sensitivity as predictors of attachment security at 36 months. *Development and Psychopathology, 16*, 231–252. doi: 10.1017/S0954579404044499

Campbell, S. B., Matestic, P., von Stauffenberg, C., Mohan, R., & Kirchner, T. (2007). Trajectories of maternal depressive symptoms, maternal sensitivity, and children's functioning at school entry. *Developmental Psychology, 43*, 1202–1215. doi: 10.1037/0012-1649.43.5.1202

Campbell, S. B., Morgan-Lopez, A. A., Cox, M. J., & McLoyd, V. C. (2009). A latent class analysis of maternal depressive symptoms over 12 years and offspring adjustment in adolescence. *Journal of Abnormal Psychology, 118*, 479–493. doi: 10.1037/a0015923

Chabrol, H., Teissedre, F., Armitage, J., Danel, M., & Walburg, V. (2004). Acceptability of psychotherapy and antidepressants for postnatal depression among newly delivered mothers. *Journal of Reproductive and Infant Psychology, 22*, 5–12. doi: 10.1080/02646830310001643094

Chazan-Cohen, R., Roderick Stark, D., Mann, T. L., & Fitzgerald, H. E. (2007). Early Head Start and infant mental health. *Infant Mental Health Journal, 28*, 99–105. doi: 10.1002/imhj.20124

Cicchetti, D., Rogosch, F. A., Toth, S. L., & Spagnola, M. (1997). Affect, cognition, and the emergence of self-knowledge in the toddler offspring of depressed mothers. *Journal of Experimental Child Psychology, 67*, 338–362. doi:10.1006/jecp.1997.2412

Cohn, J. F., Matias, R., Tronick, E. Z., Connell, D., & Lyons-Ruth, K. (1986). Face-to-face interactions of depressed mothers and their infants. *New Directions for Child and Adolescent Development*, 31–45. doi: 10.1002/cd.23219863405

Cohn, J. F., & Tronick, E. (1989). Specificity of infants' response to mothers' affective behavior. *Journal of American Academy of Child & Adolescent Psychiatry, 28*, 242–248. doi:10.1097/00004583-198903000-00016

Cooper, P. J., Murray, L., Wilson, A., & Romaniuk, H. (2003). Controlled trial of the short- and long-term effect of psychological treatment of post-partum depression. I. Impact on maternal mood. *British Journal of Psychiatry, 182*, 412–419. doi: 10.1192/bjp.02.177

Cuijpers, P., Geraedts, A. S., van Oppen, P., Andersson, G., Markowitz, J. C., & van Straten, A. (2011). Interpersonal psychotherapy for depression: A meta-analysis. *American Journal of Psychiatry, 168*, 581–592. doi:10.1176/appi.ajp.2010.10101411

Davenport, Y. B., Zahn-Waxler, C., Adland, M. L., & Mayfield, A. (1984). Early child-rearing practices in families with a manic-depressive parent. *American Journal of Psychiatry, 141*, 230–235. Retrieved from http://vb3lk7eb4t.search.serialssolutions.com/?sid=Entrez:PubMed&id=pmid:6691483

Fernald, A., & Kuhl, P. (1987). Acoustic determinants of infant preference for motherse speech. *Infant Behavior and Development, 10*, 279–293. doi:10.1016/0163-6383(87)90017-8

Field, T. (1995). Infants of depressed mothers. *Infant Behavior and Development, 18*, 1–13. doi:10.1017/S0954579400005551

Field, T. (1998a). Early interventions for infants of depressed mothers. *Pediatrics, 102*, 1305–1310. Retrieved from www.pediatricsdigest.mobi/content/102/Supplement_E1/1305.full.pdf+html

Field, T. (1998b). Maternal depression effects on infants and early interventions. *Preventive Medicine, 27*, 200–203. doi:10.1006/pmed.1998.0293

Field, T., Healy, B., Goldstein, S., & Gutherz, M. (1990). Behavior-state matching and synchrony in mother-infant interactions of nondepressed versus depressed dyads. *Developmental Psychology, 26*, 7–14. doi: 10.1037/0012-1649.26.1.7

Field, T., Healy, B., Goldstein, S., Perry, S., Bendell, D., Schanberg, S., . . . Kuhn, C. (1988). Infants of depressed mothers show "depressed" behavior even with nondepressed adults. *Child Development, 59*, 1569–1579. Retrieved from www.jstor.org/stable/1130671

Forman, D. R., O'Hara, M. W., Stuart, S., Gorman, L. L., Larsen, K. E., & Coy, K. C. (2007). Effective treatment for postpartum depression is not sufficient to improve the developing mother-child relationship. *Development and Psychopathology, 19*, 585–602. doi:10.1017/S0954579407070289

Goodman, S., Rouse, M., Connell, A., Broth, M., Hall, C., & Heyward, D. (2011). Maternal depression and child psychopathology: A meta-analytic review. *Clinical Child and Family Psychology Review, 14*, 1–27. doi: 10.1007/s10567-010-0080-1

Goodman, S. H., Brogan, D., Lynch, M. E., & Fielding, B. (1993). Social and emotional competence in children of depressed mothers. *Child Development, 64*, 516–531. doi:10.1111/j.1467-8624.1993.tb02925.x

Gross, D., Conrad, B., Fogg, L., & Wothke, W. (1994). A longitudinal model of maternal self-efficacy, depression, and difficult temperament during toddlerhood. *Research in Nursing & Health, 17*, 207–215. doi: 10.1002/nur.4770170308

Grote, N. K., Swartz, H. A., & Zuckoff, A. (2008). Enhancing interpersonal psychotherapy for mothers and expectant mothers on low incomes: Adaptations and additions. *Journal of Contemporary Psychotherapy, 38*, 23–33. doi:10.1007/s10879-007-9065-x

Hammen, C. (1991). *Depression runs in families: The social context of risk and resilience in children of depressed mothers.* New York, NY: Springer-Verlag.

Jaenicke, C., Hammen, C., Zupan, B., Hiroto, D., Gordon, D., Adrian, C., & Burge, D. (1987). Cognitive vulnerability in children at risk for depression. *Journal of Abnormal Child Psychology, 15*, 559–572. Retrieved from http://link.springer.com/article/10.1007/BF00917241

Kaplan, P. S., Bachorowski, J. A., & Zarlengo-Strouse, P. (1999). Child-directed speech produced by mothers with symptoms of depression fails to promote associative learning in 4-month-old infants. *Child Development, 70*, 560–570. doi: 10.1111/1467-8624.00041

Karl, D. (1995). Maternal responsiveness of socially high-risk mothers to the elicitation cues of their 7-month-old infants. *Journal of Pediatric Nursing, 10*, 254–263. doi:10.1016/S0882-5963(05)80022-3

Klerman, G. L., & Weissman, M. M. (1993). *New applications of interpersonal psychotherapy.* Washington, DC: American Psychiatric Press.

Knitzer, J. (2007). *Testimony of Jane Knitzer, EdD, to the House Ways and Means Committee, U.S. Congress Hearing on Economic and Societal Costs of Poverty.* New York, NY: National Center for Children in Poverty, Columbia University Mailman School of Public Health. http://nccp.org/media/wmt07_text.pdf

Kochanska, G., Radke-Yarrow, M., Kuczynski, L., & Friedman, S. (1987). Normal and affectively ill mothers' beliefs about their children. *American Journal of Orthopsychiatry, 57*, 345–350. doi:10.1111/j.1939-0025.1987.tb03543.x

Kuhl, P. (2000, June). *Language and the brain: A "critical period for learning."* Paper presented at the Head Start's 5th National Research Conference, "Developmental and Contextual Transitions of Children and Families", Washington, DC.

Lyons-Ruth, K., Connell, D. B., Grunebaum, H. U., & Botein, S. (1990). Infants at social risk: Maternal depression and family support services as mediators of infant development and security of attachment. *Child Development, 61*, 85–98. doi: 10.1111/j.1467-8624.1990.tb02762.x

Malik, N. M., Boris, N. W., Heller, S. S., Harden, B. J., Squires, J., Chazan-Cohen, R., . . . Kaczynski, K. J. (2007). Risk for maternal depression and child aggression in Early Head Start families: A test of ecological models. *Infant Mental Health Journal, 28*, 171–191. doi:10.1002/imhj.20128

Markowitz, J. C., Milrod, B., Bleiberg, K., & Marshall, R. D. (2009). Interpersonal factors in understanding and treating posttraumatic stress disorder. *Journal of Psychiatric Practice, 15*, 133–140. doi:10.1097/01.pra.0000348366.34419.28

Mistry, R. S., Vandewater, E. A., Huston, A. C., & McLoyd, V. C. (2002). Economic well-being and children's social adjustment: The role of family process in an ethnically diverse low-income sample. *Child Development, 73*, 935–951. doi:10.1111/1467-8624.00448

Murray, L., Fiori-Cowley, A., Hooper, R., & Cooper, P. (1996). The impact of postnatal depression and associated adversity on early mother-infant interactions and later infant outcome. *Child Development, 67*, 2512–2526. doi:10.1111/j.1467-8624.1996.tb01871.x

National Institute of Child Health and Human Development Early Child Care Research Network. (1998). Early child care and self-control, compliance, and problem behavior at twenty-four and thirty-six months. *Child Development, 69*, 1145–1170. Retrieved from www.jstor.org/stable/1132367

National Institute of Child Health and Human Development Early Child Care Research Network. (1999). Chronicity of maternal depressive symptoms, maternal sensitivity, and child functioning at 36 months. *Developmental Psychology, 35*, 1297–1310. doi: 10.1037/0012-1649.35.5.1297

National Research Council & Institute of Medicine. (2009). *From neurons to neighborhoods: The science of early childhood development.* In J. P. Shonkoff & D. A. Philips (Eds.), Board on Children, Youth, and Families, Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

Needlman, R., Stevenson, J., & Zuckerman, B. (1991). Psychosocial correlates of severe temper

tantrums. *Journal of Developmental & Behavioral Pediatrics, 12*, 77–83. Retrieved from http://journals.lww.com/jrnldbp/Abstract/1991/04000/Psychosocial_Correlates_of_Severe_Temper_Tantrums.2.aspx

O'Hara, M. W. (2009). Postpartum depression: What we know. *Journal of Clinical Psychology, 65*, 1258–1269. doi:10.1002/jclp.20644

Peplau, H. E. (1952). *Interpersonal relations in nursing: A conceptual rrame of reference for psychodynamic nursing.* New York, NY: Springer.

Radke-Yarrow, M., Belmont, B., Nottelmann, E., & Bottomly, L. (1990). Young children's self-conceptions: Origins in the natural discourse of depressed and normal mothers and their children. In D. Cicchetti & M. Beeghly (Eds.), *The self in transition: Infancy to childhood* (pp. 345–361). Chicago, IL: University of Chicago Press.

Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement, 1*, 285–401. doi:10.1177/014662167700100306

Raikes, H. H., & Love, J. M. (2002). Early Head Start: A dynamic new program for infants and toddlers and their families. *Infant Mental Health Journal, 23*, 1–13. doi:10.1002/imhj.10000

Rosenblum, O., Mazet, P., & Bénony, H. (1997). Mother and infant affective involvement states and maternal depression. *Infant Mental Health Journal, 18*, 350–363. doi:10.1002/(SICI)1097-0355(199724)18:4<350::AID-IMHJ3>3.0.CO;2-P

Rutter, M., & Quinton, D. (1984). Parental psychiatric disorder: Effects on children. *Psychological Medicine, 14*, 853–880. doi:10.1017/S0033291700019838

Sachs, B., & Hall, L. A. (1991). Maladaptive mother-child relationships: A pilot study. *Public Health Nursing, 8*, 226–233. doi:10.1111/j.1525-1446.1991.tb00661.x

Stepakoff, S., Beebe, B., & Jaffe, J. (2000, July). *Mother-infant tactile communication at four months: Infant gender, maternal ethnicity and maternal depression.* Paper presented at the Biennial Conference of the International Society on Infant Studies, Brighton, England.

Stuart, S., O'Hara, M., & Gorman, L. (2003). The prevention and psychotherapeutic treatment of postpartum depression. *Archives of Women's Mental Health, 6*, s57–s69. doi:10.1007/s00737-003-0003-y

Swartz, H. A., Frank, E., Zuckoff, A., Cyranowski, J. M., Houck, P. R., Cheng, Y., . . . Shear, M. K. (2008). Brief interpersonal psychotherapy for depressed mothers whose children are receiving psychiatric treatment. *The American Journal of Psychiatry, 165*, 1155–1162. doi:10.1176/appi.ajp.2008.07081339

Swartz, H. A., Zuckoff, A., Frank, E., Spielvogle, H. N., Shear, M. K., Fleming, M. A. D., & Scott, J. (2006). An open-label trial of enhanced brief interpersonal psychotherapy in depressed mothers whose children are receiving psychiatric treatment. *Depression and Anxiety, 23*, 398–404. doi: 10.1002/da.20212

Sweet, M. A., & Appelbaum, M. I. (2004). Is home visiting an effective strategy? A meta-analytic review of home visiting programs for families with young children. *Child Development, 75*, 1435–1456. doi: 10.1111/j.1467-8624.2004.00750.x

Tucker-Drob, E. M., Rhemtulla, M., Harden, K. P., Turkheimer, E., & Fask, D. (2011). Emergence of a gene x socioeconomic status interaction on infant mental ability between 10 months and 2 years. *Psychological Science, 22*, 125–133. doi:10.1177/0956797610392926

van Doesum, K. T., Riksen-Walraven, J. M., Hosman, C. M., & Hoefnagels, C. (2008). A randomized controlled trial of a home-visiting intervention aimed at preventing relationship problems in depressed mothers and their infants. *Child Development, 79*, 547–561. doi:10.1111/j.1467-8624.2008.01142.x

Watson, J. S., & Ramey, C. T. (1972). Reactions to response-contingent stimulation in early infancy. *Merrill-Palmer Quarterly of Behavior and Development, 18*, 219-227. Retrieved from www.jstor.org/stable/23084608

Weinberg, M. K., & Tronick, E. Z. (1998). Emotional characteristics of infants associated with maternal depression and anxiety. *Pediatrics, 102*, 1298–1304. Retrieved from http://pediatrics.aappublications.org.libproxy.lib.unc.edu/content/102/Supplement_E1/1298.full.pdf+html

Wickberg, B., & Hwang, C. P. (1996). Counselling of postnatal depression: A controlled study on a population based Swedish sample. *Journal of Affective Disorders, 39*, 209–216. doi:10.1016/0165-0327(96)00034-1

Zeanah, C. H., Boris, N. W., & Larrieu, J. A. (1997). Infant development and developmental risk: A review of the past 10 years. *Journal of American Academy Child & Adolescent Psychiatry, 36*, 165–178. doi:10.1097/00004583-199702000-00007

Zlochower, A., & Cohn, J. (1996). Vocal timing in face-to-face interaction of clinically depressed and nondepressed mothers and their 4-month old infants. *Infant Behavior & Development, 19*, 371–374. doi:10.1016/S0163-6383(96)90035-1

Zuckerman, B., Bauchner, H., Parker, S., & Cabral, H. (1990). Maternal depressive symptoms during pregnancy, and newborn irritability. *Journal of Developmental & Behavioral Pediatrics, 11*, 190–194. doi:10.1177/0956797610392926

Preventing Perinatal Depression Through Home Visiting

The Mothers and Babies Course

DEBORAH F. PERRY
Georgetown University

S. DARIUS TANDON
Northwestern University

KAREN EDWARDS
TAMAR MENDELSON
Johns Hopkins University

During her pregnancy, Latasha had been really irritable and sad most of the time. As a first-time mother, she worried about how she was going to support herself and her baby—especially now that Mike, the baby's father, was in jail. Latasha was hoping that her mom would help her out, but her mother was not very happy to hear that Latasha had gotten back together with Mike. When Latasha went to the Department of Social Services to see what programs were available for new mothers, the case worker told her about Healthy Families—a home visiting program that serves families in her neighborhood. At first Latasha was hesitant to have someone coming into her apartment, because she hadn't really had anybody over in a while. During one of their visits, her home visitor, Belinda, asked Latasha some questions about her mood and how she had been feeling. Latasha admitted that she had been feeling really depressed, but she quickly added that she did not need to go see anybody, because "she isn't crazy" and "those people just want to give you drugs." On the basis of Latasha's score on the Edinburgh Postnatal Depression Scale (Cox, Holden, & Sagovsky, 1987), Belinda didn't think Latasha would be eligible for mental health treatment. Yet she knew that Latasha needed help and support to avoid developing a significant and more impairing depression. Belinda thought that Latasha would be the perfect candidate for a new Mothers and Babies Course cohort that was starting next week. This group intervention is designed to prevent the development of a major depressive episode in women who were starting to feel sad and overwhelmed.

Home visiting (HV) programs enroll women who have a lot of the most common risk factors for postpartum depression. These include elevated depressive symptoms during pregnancy, a personal or family history of depression, low levels of social support, and unplanned pregnancy, to name a few (Lancaster et al., 2010). Most postpartum mothers experience changes in their mood that may last for only a week or less. These mood changes—often called the "baby blues"—are brought on by a combination of psychological, hormonal, and physical changes in the first few weeks after a baby is born. For about 15% of all new mothers, these mood changes persist and develop into a major depressive episode (Moses-Kolko & Roth, 2004). The rate of postpartum depression is twice as high in low-income mothers—meaning that up to one third of poor women are trying to parent an infant while struggling with a major mood disorder (Bennett, Einarson, Taddio, Koren, & Einarson, 2004; Holzman et al., 2006). In HV, research has shown than an additional 50% of enrolled participants report significantly elevated depressive symptoms—that is, they have signs of depression but do not necesssarily meet the criteria for major depression (Ammerman et al., 2009; Duggan et al., 2007; Tandon, Parillo, Jenkins, & Duggan, 2005) and thus do

Abstract

Home visiting (HV) programs serve women at high risk for developing postpartum depression because of factors such as poverty and low social support. Depression poses serious threats not only to mother–child attachment and healthy infant development but also to women's ability to engage with HV services and supports. The Mothers and Babies (MB) Course—a cognitive behavioral intervention developed for low-income perinatal women—is effective at reducing risk for postpartum depression in HV clients. The MB Course is feasible to integrate into the HV setting and has been well received by HV staff and clients.

Photo: © iStockphoto.com/billyfoto

Most postpartum mothers experience changes in their mood that may last for a week or less.

not qualify for services (see box Addressing Gaps in Mental Health Care). Without mental health services, many of these pregnant and postpartum mothers will go on to develop a major depressive disorder. It is this population of women who can benefit from evidence-based interventions aimed at preventing depression.

The Rationale for Addressing Depression in HV

For several decades, the research literature has established unequivocally that clinically significant depression is a powerful negative influence on a new mother's ability to provide responsive parenting, form positive attachments, and care for her infant's mental health and safety (McLearn, Minkovitz, Strobino, Marks, & Hou, 2006; Sohr-Preston & Scaramella, 2006; VanDoesum, Hosman, Riksen-Walraven, & Hoefnagels, 2007). A growing number of studies have shown that even subclinical levels of depressive symptoms have consequences for young children's social–emotional and behavioral outcomes (Tronick & Reck, 2009; Weinberg et al., 2001). These mothers often struggle with reading their babies' cues, helping with emotional regulation, and modeling appropriate affective responses.

Depression is common among women targeted by HV programs. One study found that nearly 50% of women enrolling in Baltimore City HV programs exhibited depressive symptoms (Tandon et al., 2005). Similarly high rates have been found in studies of Alaska's Healthy Start HV program (Duggan et al., 2007), Healthy Families New York (DuMont et al., 2008), and first-time mothers in a regional HV program that used both professional and paraprofessional home visitors (Ammerman et al., 2009). A National Institutes of Health workshop panel discussing issues in HV noted that perinatal depression "can significantly impede the capacity of a HV program to benefit families" (Institute of Medicine, 1999, p. 10). The presence of perinatal depression may limit clients' engagement in their HV program as well as complicate the development of a working relationship between a client and her home visitor. Indeed, Duggan and colleagues (Duggan, Berlin, Cassidy, Burrell, & Tandon, 2009) found that the positive effects of HV on maternal and child health outcomes were not as strong for depressed women, underscoring the need for HV programs to address maternal depression.

Provision of evidence-based HV services as defined by each of the model developers (i.e., without some mental health enhancements) during the perinatal period does not appear to alleviate depressive symptoms among HV participants. Duggan et al. (2007) found no differences in the percentage of HV clients and control participants exhibiting elevated depressive symptoms 2 years after program enrollment. Similar findings emerged in studies conducted by Duggan and colleagues (Duggan et al., 2004) and Mitchell-Herzfeld and colleagues (Mitchell-Herzfeld, Izzo, Greene, Lee, & Lowenfels, 2005) of the Healthy Families Hawaii and New York HV programs, respectively. In both studies, there were no differences between HV and control participants in depressive symptom scores 1 year after program enrollment, and in the Hawaii Healthy Families program this lack of difference in depression persisted for 3 years after enrollment in the HV program.

Some researchers conducted focus groups with HV staff to explore the challenges home visitors face in addressing their clients' mental health issues (Tandon, Mercer, Saylor, & Duggan, 2008). They identified several important themes in the qualitative data. First, home visitors felt they received extensive training on identifying psychosocial risks, but the training focused on acquiring knowledge about these risks rather than developing skills for screening and addressing women's resulting mood issues. Home visitors wanted clearer guidance and specialized supervision on whether

Addressing Gaps in Mental Health Care

The mental health system in the United States is focused on providing treatment services to clients who have a diagnosed disorder, that is, people who meet criteria for a mental illness under the *Diagnostic and Statistical Manual* (American Psychiatric Association, 2013). Without a diagnosis, clinicians cannot bill or receive reimbursement for psychological services they provide to clients. For women in HV whose symptoms are not severe enough to warrant a diagnosis, there are limited options for getting mental health services. Prevention services are difficult to fund and are often provided through a patchwork federal or state discretionary grants.

One example of a federal grant that addresses these gaps in services is Project LAUNCH (Linking Actions for Unmet Needs in Children's Health) funded by the Substance Abuse and Mental Health Services Administration. These 5-year grants provide funding to states, tribes, and communities to develop a comprehensive continuum of mental health promotion and prevention services for pregnant women and children from birth to 8 years old. One of the strategies that Project LAUNCH specifically endorses is the inclusion of mental health consultation in early childhood settings, such as HV programs. These mental health professionals are able to augment the expertise of the home visitors in addressing the mental health needs of their clients. Several states are currently implementing this approach, and effectiveness data are being collected and should be available for policymakers soon (Goodson, Mackrain, Perry, O'Brien, & Gwaltney, 2013).

and how to address depressive symptoms during home visits. Second, home visitors felt that existing approaches for identifying women in need of mental health and social services and coordination of referrals with relevant community service agencies were largely ineffective. In particular, home visitors expressed varying degrees of confidence in their ability to facilitate clients' initiation of, and adherence to, outside referrals.

Developing Effective Preventive Interventions

A variety of effective treatments for maternal depression exist—including cognitive behavioral therapy (CBT) and interpersonal therapy—and over the last several years researchers have been working to adapt these to prevent perinatal depression. For example, Zlotnick and her colleagues (Zlotnick, Johnson, Miller, Pearlstein, & Howard, 2001) used an interpersonal therapy model to reduce the rates of depressive episodes in their high-risk pregnant women. They conducted a randomized controlled trial of a 4-session group interpersonal therapy intervention for low-income, ethnically diverse pregnant women. Three months after they had given birth, none of the women in the treatment group had gotten depressed as compared to one third of the women in the comparison group. A larger study of the same intervention showed the same trend (Zlotnick, Miller, Pearlstein, Howard, & Sweeney, 2006), with 20% of the control group getting depressed versus 4% of the treatment group. Other interventions have been implemented with pregnant women and new mothers, and several of these report women in the intervention group have fewer depressive episodes or symptoms (Dennis, et al., 2009; Elliott, et al., 2000; Lara, Navarro, & Navarrete, 2010; Le, Perry, & Stuart, 2011). None of these interventions have been conducted in HV programs, however.

The Mothers and Babies (MB) Course for low-income perinatal populations is a group intervention led by a licensed mental health professional that is based on CBT principles and is aimed at preventing perinatal depression. This preventive intervention was initially developed and tested for pregnant women recruited from prenatal care, as described in the next section. Because depression is so common in pregnant women and new mothers served in HV, our team adapted the MB course for HV programs, and we share lessons learned from this effort.

The MB Course

The MB Course was developed as a group-based intervention to prevent postpartum depression among low-income, ethnic minority perinatal women (Muñoz et al., 2007). The MB Course uses evidence-based strategies from CBT (Lewinsohn, Muñoz, Youngren, & Zeiss, 1978; Lewinsohn, Muñoz, Youngren, & Zeiss, 1986). Depression has a negative effect on a person's mood, thoughts, activities, and contact with others. CBT addresses each of these areas, providing skills to improve mood, decrease harmful thoughts, increase pleasant activities, and improve social connectedness. To better address mothers' needs, the MB Course combines CBT strategies with principles drawn from attachment theory (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1969), which are aimed at strengthening mothers' emotional bonds with their new babies.

The original CBT model emphasizes techniques to "control" depression by changing behaviors and thoughts (Lewinsohn et al., 1978; Lewinsohn et al., 1986). As low-income, ethnic minority, uninsured individuals do not necessarily have control over many aspects of their environment, Muñoz (2005) modified the CBT model to incorporate what he termed the "healthy management of reality." Muñoz's approach focuses on helping participants learn how to manage rather than control their reality. This includes teaching participants the importance of shaping their day-to-day experiences by attending to both internal and external realities in their lives. The internal reality refers primarily to one's thoughts, which can be shaped in a positive way using cognitive methods. The external reality refers to one's objective environment, which one can influence using behavioral methods, such as engaging in pleasant activities and increasing positive interpersonal contacts.

Photo: ©iStockphoto.com/47743445EAN

The presence of perinatal depression may limit clients' engagement in their home visiting program as well as complicate the development of a working relationship between a client and her home visitor.

The MB Course is organized into three modules emphasizing the relationship between mood and depression and

1. **thoughts** (identify helpful and harmful thoughts and ways to change harmful thoughts to improve mood),
2. **pleasant activities** (identify ways to change one's behaviors to increase mood), and
3. **interpersonal contacts** (identify sources of support, and actively identify and practice communication skills, to improve one's relationships and mood).

In these three modules, women learn skills for managing their own thoughts, activities, and contacts in a positive way. They also learn how using skills related to each of the three domains can strengthen their relationship with their baby and can teach their baby healthy ways of managing mood.

The course is sensitive to challenges that low-income women face. For example, women are encouraged to generate ideas for pleasant activities that are low- or no-cost so that these activities are feasible for them to schedule and engage in on a regular basis. Given significant interpersonal stressors in many women's lives, group members are guided to think about which individuals they can turn to for advice, companionship, emotional support, and practical support. They are also given tips on ways to expand their social support networks in areas they identify as lacking in support (e.g., using the MB group as a support

network). Skills are taught using variety of techniques, including role plays, cartoons, and group discussion; relaxation skills are also introduced and practiced in each session.

An initial randomized trial of the MB Course's efficacy took place in San Francisco and enrolled 45 primarily Mexican-American pregnant women from prenatal care. Over their first year postpartum, 14% of the MB group developed clinically significant depression as compared to 25% of the comparison group (Muñoz et al., 2007). A second randomized trial conducted with more than 200 pregnant Latin American women receiving prenatal care in a federally qualified health center found that women in the MB group had fewer depressive symptoms than the comparison group immediately following their participation in the MB Course (Le et al., 2011). Only 8% of the women who learned the CBT skills went on to develop postpartum depression—which is one third the rate expected in a low-income, high-risk population (Gress-Smith, Luecken, Lemery-Chalfant, & Howe, 2011).

The high prevalence of pregnant women and new mothers in HV who were reporting high depressive symptoms—but not yet experiencing a major depressive disorder—combined with home visitors' limited effectiveness at directly impacting depression in their clients, suggested that the integration of a preventive intervention into HV was needed.

Integrating the MB Course Into HV Programs

The high prevalence of pregnant women and new mothers in HV who were reporting high depressive symptoms—but not yet experiencing a major depressive disorder—combined with home visitors' limited effectiveness at directly impacting depression in their clients, suggested that the integration of a preventive intervention into HV was needed. Our team, building on long-standing collaborations with HV programs in Baltimore City, partnered with multiple HV programs to adapt the MB Course for the HV context. We made two primary adaptations to the original course. First, the MB curriculum was condensed into six 2-hour group sessions (see Table 1); this decision was based on HV program feedback that women would be more likely to participate in an intervention with fewer intervention sessions, even if it meant lengthening each session.

Second, we added one-on-one "check ins," or reinforcements, conducted by home visitors between MB group sessions. Home visitors are asked to reinforce group material for 5 to 10 minutes during regularly scheduled home visits with intervention participants. To facilitate this process, on the basis of feedback from our HV partners, we developed laminated index cards for home visitors. One side of the index card summarizes key intervention points while the other side outlines participants' weekly personal project. Personal projects are assigned at the end of each group session; they involve practicing skills taught during the session. We consider the home visitor reinforcements an important addition to the MB curriculum because they facilitate participants' practice of skills between sessions, a key component of CBT interventions, thereby strengthening skills acquisition.

To evaluate the effectiveness of the MB course in HV, we enrolled women who had a high score on a self-reported depression screener, or a personal history of depression, or both. Seventy-nine women enrolled in this randomized control trial, and the findings were very encouraging: women in the MB groups had significantly fewer depressive symptoms and depressive episodes than women in the comparison group, who received standard HV services (Tandon, Leis, Mendelson, Perry, & Kemp, 2013; Tandon, Mendelson, Kemp, Leis, & Perry, 2011). Of 41 women in the MB Course, 6 (14.6%) had a major depressive episode at the 6-month follow-up point, as compared to 11 of 34 (32.4%) women in the comparison group. We also found that the MB course significantly improved participants' confidence in their ability to effectively regulate their own mood (Mendelson, Leis, Perry, Stuart, & Tandon, 2013).

Table 1. Core Content in the Mothers and Babies Course

Six 2-hour sessions of the Mothers and Babies (MB) Course cover the following content:

Pleasant Activities	1. Purpose of MB Course, stress that can affect mother–baby relationship, how pleasant activities affect mood
	2. Generating list of pleasant activities mother and baby enjoy, overcoming obstacles to doing pleasant activities, personal commitment to do pleasant activities
Thoughts	3. How thoughts affect mood, helpful and harmful thoughts related to pregnancy, how to "talk back" to harmful thoughts
	4. Helpful and harmful thoughts related to parenting, ways to change harmful thought patterns and increase helpful thoughts
Contact With Others	5. How contact with others affects mood, people who support mother and baby, effective communication strategies
	6. Role changes and impact on mood, managing interpersonal relationships, safety in relationships, graduation

Current Adaptations: Home Visitor-led MB Groups and One-on-Ones

To promote the sustainability of the MB Course in HV programs, we have been working closely with HV clients, staff, and other key stakeholders to create two adaptations of the MB Course. One adaptation involves training paraprofessional home visitors (instead of mental health professionals) to implement MB groups. A recent pilot study (S. D. Tandon, personal communication, 2014) of this adaptation indicated a significant decline in depressive symptoms from baseline to a 3-month follow-up and also indicated that home visitors were able to deliver intervention material accurately and effectively. A second adaptation involves training paraprofessional home visitors to implement the MB curriculum via a one-on-one modality. This adaptation translates the core content of the MB curriculum into 15 brief sessions that can be delivered in 15–20 minutes. The MB one-on-one curriculum is delivered by a home visitor trained on the MB Course. The one-on-one sessions are organized into the same three modules as the group version: pleasant activities, thoughts, and contact with others. The one-on-one sessions contain didactic instruction as well as activities and opportunities for discussion between the home visitor and client. The one-on-one sessions can be delivered during regularly scheduled home visits, as supplementary home visits, or by phone.

On the basis of feedback from HV programs, home visitors can deliver two one-on-one sessions per week instead of one if a client asks for more frequent receipt of intervention material or if a home visitor feels a

client could benefit from additional material given the salience of a particular topic to the client's current life situation. For example, a home visitor may want to deliver two sessions on pleasant activities if a pregnant client expresses concern about not being able to engage in enjoyable activities given diminished energy because of pregnancy. A 3-month booster session lasting 15–20 minutes is also conducted with the MB one-on-one curriculum. We are in the process of evaluating these adaptations and will report back on the findings soon.

Applying Lessons Learned

Working with our HV partners has reinforced the need to integrate an intentional approach to addressing depression in HV clients. It has also pushed us to adapt the delivery of the content in different modalities to meet the needs of different program models and community contexts. We started by partnering with paraprofessional and professional HV programs in Baltimore, delivering the MB Course in a group format, led by clinicians. Through feedback from these HV programs and others across the country who were motivated to embed this intervention into their settings, we adapted the intervention to allow home visitors themselves to deliver the content—both in groups and most recently in 15 one-one-one sessions.

The mood management strategies that participants in the MB Course learn are relevant to their lives and are making a difference in how they manage their stressors. The participants are able to describe the specific ways in which the cognitive–behavioral tools are being applied in their day to day lives, as well as the connections with the other women they made when they participated in the groups. An experienced home visitor shared her experience in leading the MB groups and how it led to changes for herself and her clients (see box Participant Voices). These impacts are likely to ripple through other areas of the women's lives—leading to improvements in parenting, and perhaps more distal outcomes such as their children's social and emotional well-being.

The climate is ripe for integrating approaches like the MB course into other HV programs across the country. Currently, the federal Maternal and Child Health Bureau is investing $1.5 billion to expand access to evidence-based HV programs under the Maternal, Infant, and Early Childhood Home Visiting (MIECHV) program. States are focused on scaling up 1 of 14 nationally approved home visiting models, and a high premium is placed on states documenting progress in six benchmark areas. Screening and referral for depression are among a comprehensive set of indicators that are tracked, as are measures of client engagement and improvements in maternal and child health outcomes. Addressing perinatal depression is one of three specific areas that the federal Maternal and Child Health Bureau has targeted in a recently funded Home Visiting Collaborative Innovation and Improvement Network—underscoring the importance of this topic. States and communities that are seeking to address this important issue may learn from our efforts to integrate effective preventive interventions into HV programs.

Participant Voices

A home visiting (HV) client and home visitor share their experiences with the Mothers and Babies (MB) Course:

An HV client in Baltimore, Maryland:
Where do I begin? The Mothers and Babies program saved me, as far as being a first-time mom; all the emotions that come with motherhood can be a lot. When I got the call I was at a place of frustration, depression, and loneliness and really needed what the group was going to offer. I didn't know at the time how big of a deal the Mothers and Babies program would help me and change my life for the better. When I got the information sent out to me I was a bit nervous, being that I hadn't interacted with other moms and adults in months. Nevertheless, I attended and still to this very day am so happy I made that decision. I met other moms that had issues like I did, and we could relate and talk about experiences we all had that helped each other out. As mothers we bond on so many levels and helped each other through different situations. I still keep in touch with some of the moms. I met instructors that gave techniques on how to control your emotions as well as assignments which we applied to our everyday life. We were given quizzes which were discussed at our next group. The instructors made our group personal and would talk with concern and guidance but also listening to what you had to say. This made me feel like I mattered. I learned so much from the instructors during the time I spent in Mothers and Babies that to this day I still use some of my favorite techniques: the counting down method, and the inhale and exhale, and a lot more. It may sound simple, but when you're at a breaking point it helps. I could go on and on about all the good things about Mothers and Babies but I would say that it help me get through some tough times then; and I always be grateful for the Mothers and Babies program. It was a great experience.

Home Visitor who led an MB group:
First I want to thank you for allowing [our HV] program to be privy of your Mothers and Babies group curriculum. During the first group sessions with the clients, I witnessed sad, lonely faces that were starving for inner peace to cope with their outer reality. As the weekly sessions unfolded, those same faces started glowing with a newfound way to manage all of the other stuff going on in their lives. They gradually saw the light at the end of the tunnel, and that is "what I am, my child will become."

My career with HV programs started 23 years ago; leaving my house the last day of group was the happiest day of my entire career with the [agency]. … It is now my belief that a program that provides case management to pregnant women and children will not be effective without having groups as a part of their program. It is also my belief that this course should be taught to inner city teens and a requirement for mothers who have lost custody of their children to the Department of Social Services protective services. Once again I thank you for this life-changing course that I know has made a difference in the lives of the participants.

Learn More

Mothers and Babies Mood and Health Project
http://mbp.columbian.gwu.edu
The mission of the Mothers and Babies: Mood and Health Research Program is to develop research aimed at preventing the onset of perinatal depression and improving the mental health of families. Its intent is to focus on underserved populations, including low-income and ethnically diverse populations. Currently, the focus is on predominantly Spanish-speaking Latino populations.

Mothers and Babies Manuals
http://medschool2.ucsf.edu/latino/manuals.aspx#motherandbabies
Instructors and participants' manuals for the original 12-week Mothers and Babies course are available for free download.

Deborah F. Perry, *PhD, is an associate professor at the Georgetown University Center for Child and Human Development. Currently, she serves as the senior evaluator on two home visiting grants and as a co-investigator on research that examines the impact of integrating the Mothers and Babies (MB) Course into home visiting. Dr. Perry has also researched the effectiveness of*

the MB Course in prenatal care and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC).

S. Darius Tandon, *PhD, is an associate professor in the Department of Medical Social Sciences at the Northwestern University Feinberg School of Medicine and the associate director of the Center for Community Health within Northwestern's Institute of Public Health and Medicine. He has conducted home visiting (HV) research for the last decade, with his most recent work focused on the development and rigorous testing of the Mothers and Babies Course to prevent postpartum depression among HV clients.*

Karen Edwards, *MSW, serves as a senior research project coordinator at the Johns Hopkins University, School of Medicine. During the past several years, she has coordinated the integration of the Mothers and Babies Course into home visitation programs that serve large numbers of perinatal women in Baltimore City, Maryland.*

Tamar Mendelson, *PhD, is an associate professor in the Department of Mental Health at the Johns Hopkins Bloomberg School of Public Health. She contributed to the first randomized trial of the Mothers and Babies (MB) Course at the University of California, San Francisco, and has collaborated for the past 7 years with Drs. Tandon and Perry on research aimed at integrating the MB Course into the home visitation setting and evaluating its efficacy.*

References

Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation.* Oxford, UK: Erlbaum.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (DSM-V).* Arlington, VA: Author.

Ammerman, R., Putnam, F., Altaye, M., Chen, L., Holleb, L., Stevens, J., . . . Van Ginkel, J. (2009). Changes in depressive symptoms in first time mothers in home visitation. *Child Abuse & Neglect, 33,* 127–138.

Bennett, H. A., Einarson, A., Taddio, A., Koren, G., & Einarson, T. R. (2004). Prevalence of depression during pregnancy: A systematic review. *Obstetrics and Gynecology, 103,* 698–709.

Bowlby, J. (1969). *Attachment, separation, and loss* (Vol. 1). Oxford, UK: Erlbaum.

Cox, J. L., Holden, J. M., & Sagovsky, R. (1987). Detection of postnatal depression. Development of the 10-item Edinburgh Postnatal Depression Scale. *The British Journal of Psychiatry, 150*(6), 782–786.

Dennis, C. L., Hodnett, E., Kenton, L., Weston, J., Zupancic, J., Stewart, D. E., & Kiss, A. (2009). Effect of peer support on prevention of postnatal depression among high risk women: multisite randomised controlled trial. *British Medical Journal, 338,* a3064

Duggan, A. K., Caldera, D., Rodriguez, K., Burrell, L., Rohde, C., & Crowne, S. S. (2007). Impact of a statewide home visiting program to prevent child abuse. *Child Abuse and Neglect, 31,* 801–827.

Duggan, A. K., Fuddy, L., Burrell, L., Higman, S. M., McFarlane, E., Windham, A., & Sia, C. (2004). Randomized trial of a statewide home visiting program to prevent child abuse: Impact in reducing parental risk factors. *Child Abuse and Neglect, 28,* 623–643.

Duggan, A. K., Berlin, L. J., Cassidy, J., Burrell, L., & Tandon, S. D. (2009). Examining maternal depression and attachment insecurity as moderators of the impacts of home visiting for at-risk mothers and infants. *Journal of Consulting and Clinical Psychology, 77,* 788–799.

DuMont, K., Mitchell-Herzfeld, S., Greene, R., Lee, E., Lowenfels, A., Rodriguez, M., & Dorabawila, V. (2008). Healthy Families New York (HFNY) randomized trial: Effects on early child abuse and neglect. *Journal of the American Medical Association, 32,* 295–315.

Elliott, S. A., Leverton, T. J., Sanjack, M., Turner, H., Cowmeadow, P., Hopkins, J., & Bushnell, D. (2000). Promoting mental health after childbirth: A controlled trial of primary prevention of postnatal depression. *British Journal of Clinical Psychology, 39,* 223–241.

Goodson, B., Mackrain, M., Perry, D. F., O'Brien, K., & Gwaltney, M. (2013). Enhancing home visiting with mental health consultation. *Pediatrics, 132,* s180–s190.

Gress-Smith, J. L., Luecken, L. J., Lemery-Chalfant, K., & Howe, R. (2011). Postpartum depression prevalence and impact on infant health, weight, and sleep in low-income and ethnic minority women and infants. *Maternal and Child Health Journal, 16*(4), 887–893

Holzman, C., Eyster, J., Tiedje, L. B., Roman, L. A., Seagull, E., & Rahber, M. H. (2006). A life course perspective on depressive symptoms in mid-pregnancy. *Maternal and Child Health Journal, 10,* 127–138.

Institute of Medicine. (1999). *Revisiting home visiting: Summary of a workshop.* Washington, DC: National Academy Press.

Lancaster, C. A., Gold, K. J., Flynn, H. A., Yoo, H., Marcus, S. M., & Davis, M. M. (2010). Risk factors for depressive symptoms during pregnancy: A systematic review. *American Journal of Obstetrics and Gynecology, 202,* 5–14.

Lara, M. A., Navarro, C., & Navarrete, L. (2010). Outcomes results of a psycho-educational intervention in pregnancy to prevent PPD: A randomized control trial. *Journal of Affective Disorders, 122,* 109–117.

Le, H. N., Perry, D. F., & Stuart, E. A. (2011). Randomized controlled trial of a preventive intervention for perinatal depression in high risk Latinas. *Journal of Consulting and Clinical Psychology, 79,* 135–141.

Lewinsohn, P. M., Muñoz, R. F., Youngren, M. A., & Zeiss, A. M. (1978). *Control your depression.* New York, NY: Prentice Hall.

Lewinsohn, P. M., Muñoz, R. F., Youngren, M. A., & Zeiss, A. M. (1986). *Control your depression* (rev. ed.). New York, NY: Prentice Hall.

McLearn, K., Minkovitz, C., Strobino, D., Marks, E., & Hou, W. (2006). The timing of maternal depressive symptoms and mothers' parenting practices with young children: Implications for pediatric practice. *Pediatrics, 118,* 174–182.

Mendelson, T., Leis, J., Perry, D., Stuart, E., & Tandon, S. D. (2013). Impact of a preventive intervention for perinatal depression on mood regulation, social support, and coping. *Archives of Women's Mental Health, 16,* 211–218.

Mitchell-Herzfeld, S., Izzo, C., Greene, R., Lee, A., & Lowenfels, A. (2005). *Evaluation of Healthy Families New York (HFNY): First Year Program Impacts.* Rensselaer, N.Y.: New York State Office of Children and Family Services, Bureau of Evaluation and Research; Albany, N.Y.: Center for Human Services Research, University at Albany.

Moses-Kolko, E. L., & Roth, E. K. (2004). Antepartum and postpartum depression: Healthy mom, healthy baby. *Journal of the American Medical Women's Association, 59,* 181–191.

Muñoz, R. F. (2005). *Healthy management of reality. Unpublished manuscript.* Retrieved fromwww.stanford.edu/~yevaud/munoz_healthymanagementofreality_2005.pdf

Muñoz, R. F., Le, H. N., Ippen, C. G., Diaz, M. A., Urizar, G. G., Soto, J., . . . Lieberman, A. F. (2007). Prevention of postpartum depression in low-income women: Development of the Mamás y Bebés/Mothers and Babies Course. *Cognitive and Behavioral Practice, 14,* 70–83.

Sohr-Preston, S. L., & Scaramella, L. V. (2006). Implications of timing of maternal depressive symptoms for cognitive and language development during early childhood. *Clinical Child and Family Psychology Review, 9,* 65–83.

Tandon, S. D., Leis, J. A., Mendelson, T., Perry, D. F., & Kemp, K. (2013). Six-month outcomes from a randomized controlled trial to prevent perinatal depression in low-income home visiting clients. *Maternal and Child Health Journal.* doi: 10.1007/s10995-013-1313-7

Tandon, S. D., Mendelson, T., Kemp, K., Leis, J., & Perry, D. (2011). Preventing perinatal depression in low-income home visiting clients:

A randomized controlled trial. *Journal of Consulting and Clinical Psychology, 79*, 707–712.

Tandon, S. D., Mercer, C., Saylor, E., & Duggan, A. K. (2008). Paraprofessional home visitors' perceptions of addressing poor mental health, substance abuse, and domestic violence: A qualitative study. *Early Childhood Research Quarterly, 23*, 419–428.

Tandon, S. D., Parillo, K. M., Jenkins, C. J., & Duggan, A. K. (2005). Home visitors' recognition of and response to malleable risk factors among low-income pregnant and parenting women. *Maternal and Child Health Journal, 9*, 273–283.

Tronick, E., & Reck, C. (2009). Infants of depressed mothers. *Harvard Review of Psychiatry, 17*, 147–156.

VanDoesum, K., Hosman, C., Riksen-Walraven, J., & Hoefnagels, C. (2007). Correlates of depressed mothers' sensitivity toward their infants: The role of maternal, child, and contextual characteristics. *Journal of the American Academy of Child and Adolescent Psychiatry, 46*, 747–756.

Weinberg, M. K., Tronick, E., Beegly, M., Olson, K., Kernan, H., & Riley, J. (2001). Subsyndromal depressive symptoms and major depression in postpartum women. *American Journal of Orthopsychiatry, 71*, 89–94.

Zlotnick, C., Johnson, S. L., Miller, I. W., Pearlstein, T., & Howard, M. (2001). Postpartum depression in women receiving public assistance: Pilot study of an interpersonal-therapy-oriented group intervention. *The American Journal of Psychiatry, 158*, 638-640.

Zlotnick, C., Miller, I. W., Pearlstein, T., Howard, M., & Sweeney, P. (2006). A preventive intervention for pregnant women on public assistance at risk for postpartum depression. *The American Journal of Psychiatry, 163*, 1443–1445.

Home Visiting Service Delivery and Outcomes for Depressed Mothers

ELIZABETH McFARLANE
SARAH SHEA CROWNE
LORI BURRELL
ANNE DUGGAN
Johns Hopkins University

Home visiting model development and dissemination have accelerated in recent years. This trend is driven by a deepening appreciation of the importance of early development (National Research Council & Institute of Medicine, 2000), the critical role of early childhood experiences (Felitti et al., 1998; National Research Council & Institute of Medicine, 2000, 2009), and home visiting's benefits (Avellar, Paulsell, Sama-Miller & Del Grosso, 2013; Filene, Kaminski, Valle, & Cachat, 2013).

Recent federal initiatives have set the course for expanding home visiting services. In 2009, the Department of Health and Human Services launched Home Visiting Evidence of Effectiveness to review the home visiting research literature and provide an assessment of the evidence of effectiveness for home visiting program models that target families with pregnant women and children from birth to 5 years old (Avellar et al., 2013). Thirteen models now have this designation. When the President signed into law the Patient Protection and Affordable Care Act of 2010 (P.L. 111-148) it amended Title V of the Social Security Act to authorize the creation of the Maternal, Infant, and Early Childhood Home Visiting (MIECHV) Program which invests $1.5 billion to expand evidence-based home visiting (U.S. Congress, 2010).

The MIECHV Program also invests in home visiting infrastructure—training, technical assistance, research, and outcome monitoring—to address key issues in advancing the field (Home Visiting Research Network, 2014). One issue is unintended variation in service delivery. For example, many families end services prematurely, have fewer visits than intended, or fail to receive core services (Daro, Hart, Boller & Bradley, 2012; Duggan et al., 2000; Gomby, Culross & Behrman, 1999). Another issue is that overall impacts are often modest (Avellar et al., 2013; Sweet & Appelbaum, 2004). A third is that service delivery and benefits vary among subgroups of intended beneficiaries, such as diminished impacts for families where there is domestic violence (Eckenrode et al., 2000).

Maternal depression's high prevalence and adverse influence on parenting underscore the need to understand how it might influence home visiting services and outcomes. Are depressed mothers more or less likely to engage in services than women who are not depressed? How do home visiting impacts for depressed mothers compare with impacts for other mothers? Depression might make it hard for a mother to develop a working relationship with her home visitor or to keep visits and participate fully in them. Alternately, depressed mothers and their children may experience greater benefits because their outcomes without intervention would be substantially poorer than those of other enrolled families.

Abstract

Maternal depression influences home visiting engagement and outcomes. This article describes research which found that depressed mothers may be more likely to enroll in home visiting but are less likely to participate as long or as frequently as intended by programs. The authors found evidence of moderation (i.e., changes in the direction and strength of home visiting impacts on parenting outcomes for depressed mothers), although for some outcomes only one or two studies reported findings. Positive program impacts for depressed mothers were found for parenting and child behavioral and social–emotional development. Research that illuminates pathways to outcomes for depressed mothers and other subgroups is needed to more effectively target engagement and prevention strategies that promote health for mothers and children.

This article begins by presenting a framework to help organize thinking about whether, how, and why maternal depression might influence services and outcomes. It summarizes relevant research and concludes with recommendations for policy, practice, and research.

Home Visiting Conceptual Framework

The framework (see Figure 1) is an adaptation of that used in the MIECHV Program's national evaluation (Michalopoulos et al., 2013) and the Home Visiting Research Network (2014). Organizational, system, and community factors influence how an implementing agency defines its home visiting service model and implementation system. Local sites explore candidate models, decide which to adopt, and adapt their choice to local circumstances. The service model is the local program's plan; it describes the theory of change, the outcomes to be achieved, the families to be targeted, the services to be provided, and the providers. A clear and coherent service model defines well-aligned pathways to each intended outcome. A program's implementation system comprises resources to operationalize the service plan. It includes staff development and clinical, administrative, and system-level supports. Its purpose is to motivate, enable, and reinforce program participants—staff, families, and other providers—to carry out their roles successfully.

The service model and implementation system determine who actually participates in home visiting. The interactions of families, home visitors, and other providers' with one another constitute actual services. Service delivery has three aspects—family enrollment, home visits, and service linkage. Outcomes include impacts on families and, through this, impacts on children.

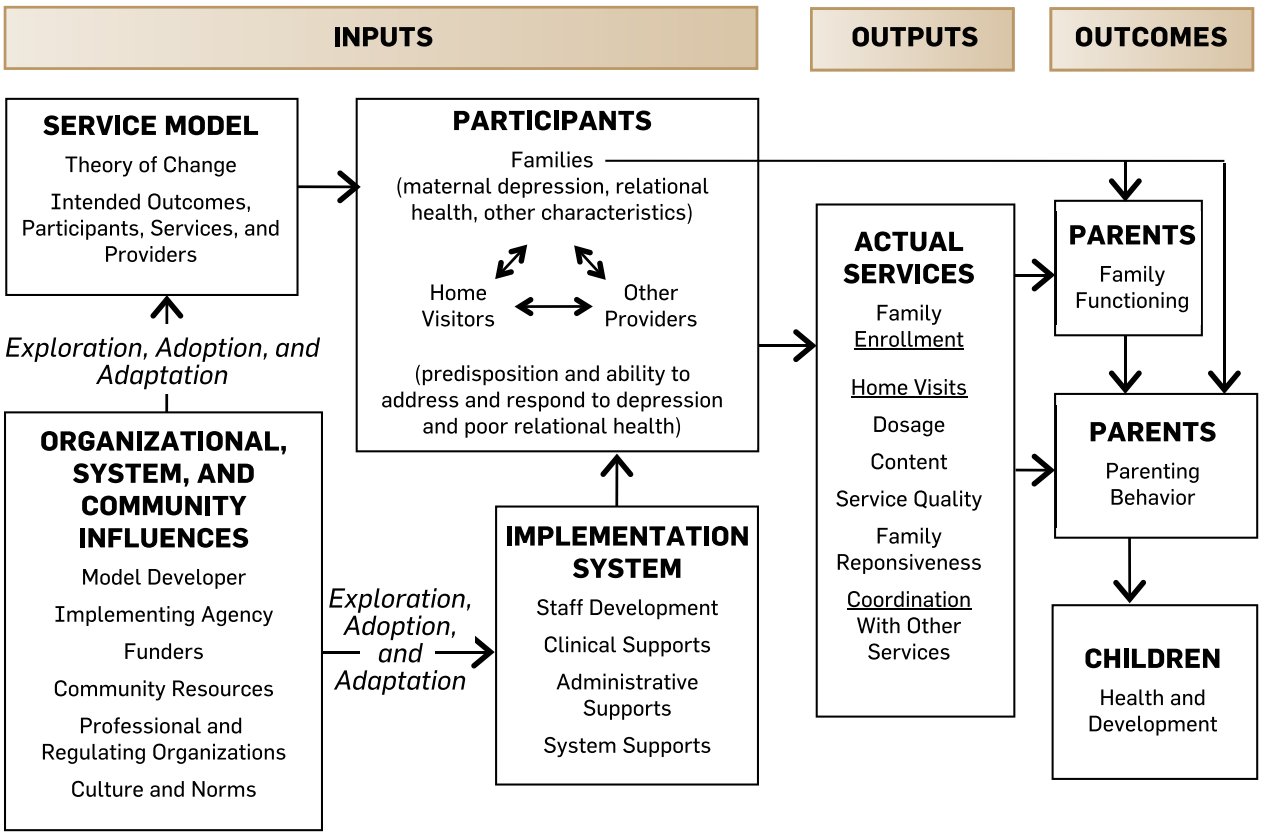
The Influence of Maternal Well-Being

There is conceptual support for the influence of maternal psychological well-being on service delivery and, by extension, on outcomes (Korfmacher et al., 2008; McCurdy & Daro, 2001). We focus here on two aspects of maternal psychological well-being—maternal mental health, especially depression, and relational health. Relational health, also referred to as attachment status, attachment style, relationship style, or relationship security, is the capacity to form healthy interpersonal relationships. It is influenced by internal working models of attachment that guide one's perceptions and behavior in close relationships (Bowlby, 1973). Internal working models guide how one thinks about providing and receiving emotional support. People with secure relational health are more comfortable in close relationships than those who are insecure. Insecure relational health is of two broad types—relationship anxiety and relationship avoidance—and is positively correlated with depressive symptoms.

Scope of the Review

We considered studies that reported on maternal depression, poor general mental health, composite measures of psychological resources that included either of these, or relational health as variables that may alter (i.e., moderate) the direction or strength of home visiting on service delivery or impact. We limited the review to randomized trials of models designated as evidence-based by Home Visiting Evidence of Effectiveness (Avellar et al., 2013). Six models had trials reporting moderation: Early Head Start (EHS), Family Check-Up, Healthy Families America (HFA), Maternal Early Childhood Sustained Home (MECSH), Nurse-Family Partnership (NFP), and Play and Learning Strategies. In our review of service delivery, we included both descriptive and experimental studies and did not limit the review to evidence-based models.

Figure 1. Framework for Conceptualizing Home Visiting



Association of Depression With Service Delivery

Services can be broadly categorized as family enrollment, home visits, and referral to and coordination with other services. Most reports of moderation focus on home visits and, within this domain, on dosage (duration of enrollment and frequency of visits). Typically, dosage is used as an indicator of family engagement. A more sophisticated conceptualization of family engagement incorporates indicators of family responsiveness as well (Robinson et al., 2002).

Enrollment

Enrollment is a continuum from introducing the program to completing home-based intake activities. Damashek, Doughty, Ware, and Silovsky (2011) found that mothers with elevated depressive symptoms were more likely than others to enroll in Safe Care as indicated by completing the intake appointment and developing a treatment plan.

Home Visits

Elements of home visits include dosage, visit content, service quality, and family responsiveness.

DOSAGE. Dosage quantifies exposure to home visiting using indicators such as duration of enrollment and frequency of visits. Studies of the association of maternal mental health with dosage have yielded mixed results. Some found a negative association. Josten et al. (2002) and Smith and Moore (2012) found that mothers with poor mental health were more likely than others to leave home visiting prematurely. The EHS trial found that depressed mothers were less likely than others to receive home visits and case management weekly (Administration for Children and Families [ACF], 2002).

Two studies reported no association of maternal mental health with dosage. Damashek et al. (2011) found that maternal depressive symptoms were not predictive of Safe Care program completion. O'Brien et al. (2012) found that a baseline composite measure of depression and anxiety was not associated with duration of enrollment or visit frequency in NFP.

Two studies reported a positive association of maternal mental health with dosage. Girvin, DePanfilis, and Daining (2007) found that depressed women were more likely than others to complete Family Connections. Ammerman et al. (2006) found that a composite indicator of risk that included history of poor mental health was positively associated with family retention and visit frequency in HFA.

Olds and Korfmacher (1998) found a curvilinear relationship between maternal psychological resources and visit frequency, with more visits for mothers scoring low and high than for those with moderate scores.

Photo: ©iStockphoto.com/Feverpitched

***Relational health*, also referred to as attachment status, attachment style, relationship style, or relationship security, is the capacity to form healthy interpersonal relationships.**

VISIT CONTENT. Visit content refers to the types of activities carried out in visits. These can be conceptualized many ways, such as the use of specific strategies. We are unaware of studies that examined maternal depression as a moderator of visit content. Korfmacher et al. (1997) found that visit content varied substantially by maternal relational health; visits with secure versus avoidant mothers were more likely to include problem-solving, while visits with avoidant versus secure mothers were less likely to include supportive therapy.

SERVICE QUALITY. Quality is a vital and complex aspect of service delivery, perhaps best measured through direct observation. We are unaware of studies that tested moderation of observed service quality. One alternative approach is to assess staff performance in recognizing poor mental health in models where staff members are expected to perform mental health assessments. Our HFA trials in Hawaii and Alaska determined whether home visitors recognized poor mental health in mothers assessed positive for depression or poor mental health by research staff at either the start or the end of the first year of enrollment. In Hawaii, the home visitor recognition rate was 14% (Duggan, Fuddy, et al., 2004) while in Alaska it was 59% (Duggan et al., 2007).

FAMILY RESPONSIVENESS. Depressed, avoidant mothers had lower levels of trust in their home visitors than did mothers with neither or only one of these characteristics in the HFA trial in Alaska (Cluxton-Keller et al., 2013). This result is concordant with studies that have found that mothers with relationship insecurity are rated by home visitors as more difficult to engage (Heinicke et al., 2000; Korfmacher et al., 1997; Spieker, Solchany, McKenna, DeKlyen, & Barnard, 2000).

Robinson et al. (2002) incorporated dosage and participant responsiveness in a five-category indicator of program use and acceptance by parents in EHS. The first two categories had few visits or none at all, and low levels of responsiveness. The middle category, the "superficially engaged," had high levels of visits but low levels of responsiveness. The last two categories had high levels of responsiveness with low or high numbers of visits. Superficially engaged mothers scored significantly higher than all other groups in terms of discomfort and lack of trust in relying on others for support in difficult circumstances.

Referral and Coordination

Home visiting aims to link families with needed community resources. The EHS trial (ACF, 2002) assessed whether the program improved access for depressed mothers as compared to other mothers. EHS had a larger impact in improving access to transportation services for depressed mothers than other mothers. However, it had a smaller impact in improving their access to many other services, including: services to promote parental psychological well-being and behavioral

health, parenting groups, child care, child preventive health care, housing, and educational and employment services. Overall, 32% of program group mothers with depressive symptoms were referred for family mental health services. EHS did not improve access to family mental health services for either subgroup of mothers.

Association of Depression With Home Visiting Impacts

Home visiting aims to promote healthy family functioning and positive parenting to achieve good outcomes for children. We consider moderation of impacts in each domain. Parenting spans the continuum from consistent, nurturing, responsive caregiving to child maltreatment. Child outcomes include health, cognitive and language development, academic achievement, socio–emotional well-being, and behavior.

Family Functioning

Family functioning comprises maternal health and well-being, family relationships, and maternal life course.

MATERNAL HEALTH AND WELL-BEING. Trials of EHS (ACF, 2002) and HFA (Duggan, Caldera, Rodriguez, Burrell, & Crowne, 2004; McFarlane et al., 2013) reported changes in the direction or strength of the relationship between home visiting and program impacts on maternal physical health, depression and general mental health, parenting stress, and substance use for mothers with depression, poor general mental health, composite measures of psychological resources that included either of these, or by relational health. No significant overall program effects were found.

Impacts by group tended to favor mothers who were not depressed or who had high levels of relationship anxiety with low levels of avoidance. There was one exception. Home visiting impact on depression scores at follow-up was greater for mothers who were depressed at enrollment than for other mothers (ACF, 2002).

However, in four instances, home visiting impacts were smaller for depressed mothers than for other mothers. These smaller impacts were for self-ratings of physical health (ACF, 2002), likelihood of scoring positive for depression at follow-up (Duggan et al., 2009), and two scores for parenting stress (ACF, 2002; Duggan et al., 2009). For mothers with high relationship anxiety in combination with low avoidance, but not other mothers, home visiting significantly decreased maternal depression, poor general mental health, severe parenting stress and problem alcohol use when children were 1–3 years old, 7–9 years old, or in both periods (McFarlane et al., 2013).

> Services can be broadly categorized as family enrollment, home visits, and referral to and coordination with other services.

FAMILY RELATIONSHIPS AND MATERNAL LIFE COURSE. Researchers have reported on moderation of impacts on family relationships and maternal life course in a trial of EHS (ACF, 2002), two trials of HFA (Duggan et al., 2009; McFarlane et al., 2013), and the Memphis trial of NFP (Kitzman et al., 1997). Analyses focused on the father's relationship with the mother and child, family conflict, intimate partner violence, parental employment and income, and maternal childbearing.

Most analyses focused on outcomes where an overall program impact was not found. Where subgroup impacts were found, they tended to favor mothers with good relational health, good general mental health, high psychological resources, or high levels of depressive symptoms or relationship anxiety only if accompanied by low relationship avoidance.

The EHS trial did not find an overall impact on the father's relationship with the mother or a significant impact for either depressed mothers or other mothers. The exception to the trend of less favorable impacts for depressed mothers was for the father's presence in the child's life. For depressed mothers, EHS did not impact this outcome; for non-depressed mothers, it reduced the father's presence.

The EHS trial found no overall impact on family conflict and no impact for depressed or non-depressed mothers. The trials of HFA found no overall impact on intimate partner violence, but did find striking differences in impacts across family subgroups. In the Alaska and Hawaii trials, benefits were observed for mothers with secure relational health (McFarlane et al., 2013), and those with relationship anxiety or depression in the absence of relationship avoidance (Duggan et al., 2009; McFarlane et al., 2013). For mothers with both depression and avoidance, no benefits were observed (Duggan et al., 2009). For those with both relationship anxiety and avoidance, home visiting had an adverse effect on psychological and physical partner violence (McFarlane et al., 2013).

The EHS trial found significant overall program effects on parental participation in education, training, and employment. In nearly all instances where the strength of positive effects varied by baseline maternal depression, benefits were greater for mothers who were not depressed at enrollment.

The EHS trial did not find an overall impact on maternal childbearing within 24 months of the index birth, nor a significant impact for either depressed or non-depressed mothers. In contrast, the NFP Memphis trial found an overall reduction in subsequent live births that was driven by reductions for mothers with high psychosocial resources; there was no impact for mothers with low psychological resources (Kitzman et al., 1997).

Parenting

Researchers have reported on moderation of impacts in trials of EHS, HFA, MECH, NFP, and Play and Learning Strategies. Across all studies combined, the studies focused on: pediatric preventive health services use, mother–child interaction, the quality of the home learning environment, use of physical discipline, and reports of maltreatment.

Overall positive program impacts were reported for EHS, HFA, MECSH, and NFP on a small number of parenting behaviors. Subgroup impacts were found across a broader array of outcomes and favored mothers with high depressive symptoms (ACF, 2002; Duggan et al., 2009; Easterbrooks et al., 2013; Kemp et al., 2011; Robinson & Emde, 2004; Smith, Landry, & Swank, 2005), those with low psychological resources (DuMont et al., 2008; Olds et al., 2014; Olds et al., 2007; Olds et al., 2002; Olds et al., 2004), those scoring high for relationship anxiety (Duggan et al., 2009; McFarlane et al., 2013; McFarlane et al., 2008;), or scoring low for relationship avoidance (Berlin et al., 2011; Duggan et al., 2009). While positive program impacts were reported for mothers with high depressive symptoms, with low psychological resources, those scoring high for relationship anxiety, or those scoring low for relationship avoidance, it is important to keep in mind that effects sizes are modest and that home visiting improvements to support mothers with these characteristics are needed.

PEDIATRIC PREVENTIVE CARE USE. The EHS trial found no significant impact on this outcome, nor evidence of an effect for either depressed mothers or others (ACF, 2002).

MOTHER–CHILD INTERACTION. Studies across all five models reported positive program impacts on a range of observed mother–child interaction behaviors. Positive subgroup impacts were found in all studies. Subgroup impacts favored mothers with high depressive symptoms (ACF, 2002; Duggan et al., 2009; Kemp et al., 2011; Smith et al., 2005), those with low psychological resources (Olds et al., 2014; Olds et al., 2002; Olds et al., 2004), those with relationship

anxiety (Duggan et al., 2009), and those scoring low for relationship avoidance (Berlin et al., 2011; Duggan et al., 2009). The EHS trial found a significant adverse program impact on maternal negative regard of the child among non-depressed mothers (ACF, 2002).

HOME ENVIRONMENT. Studies of HFA, NFP, and MECSH found positive impacts on aspects of the home learning environment such as quality, organization, routines, and play materials. Impacts were either limited to or favored mothers with high depressive symptoms (ACF, 2002; Kemp et al., 2011), those with low psychological resources (Kitzman et al., 1997; Olds et al, 2014; Olds et al., 2002; Olds et al., 2004), or scoring low for relationship avoidance (Berlin et al., 2011; Duggan et al., 2009).

DISCIPLINARY STRATEGIES AND HARSH AND NEGLECTFUL PARENTING. Trials of EHS and HFA have reported moderation of impacts on self-reported use of physical punishment and abusive and neglectful parenting. Berlin et al. (2011) found that the overall positive program impact in reducing maternally reported recent use of spanking was limited to mothers with low relationship anxiety. The New York trial of HFA did not find an overall program effect on a composite measure of self-reported serious abuse and neglect, but did find a significant decrease in the frequency of such behaviors among mothers with low psychological resources (DuMont et al., 2008). The Hawaii trial of HFA found that positive impacts on self-reported neglect were limited to mothers with high relationship anxiety in the absence of relationship avoidance (McFarlane et al., 2008).

Three studies of HFA reported moderation of impacts on reports to child protective services. The Massachusetts trial found that home visiting significantly increased the likelihood of reports for mothers with depression at follow-up (Easterbrooks et al., 2013). The Hawaii trial reported a trend for decreased substantiated child maltreatment for mothers with high relational anxiety (McFarlane et al., 2008). The Alaska trial found a complex interaction of depression with relationship anxiety and avoidance in moderating effects on substantiated maltreatment (Duggan et al., 2009). Home visiting significantly decreased maltreatment among non-depressed, anxious mothers, but significantly increased such reports among depressed mothers with low relationship anxiety coupled with high relationship avoidance.

Child Health, Development and Behavior

Researchers have reported moderation in trials of five evidence-based models—EHS, Family Check-Up, HFA, NFP, and MECCH.

PHOTO: ©ISTOCKPHOTO.COM/PAULAPHOTO

Home visiting aims to promote healthy family functioning and positive parenting to achieve good outcomes for children.

Across all studies combined, analyses focused on: parent ratings of health; illness and injury-related health care use; assessments of child psychomotor, cognitive, and language development; academic achievement; observed behavior; and parent and teacher reports of behavior. Most analyses focused on child development and behavior in infants and toddlers; two studies included measures of academic achievement and outcomes for children up to 9 years old (McFarlane et al., 2013; Olds et al., 2007; Olds et al., 2004).

Most reports considered maternal depression or low psychological resources alone as a moderator. In about a third of the reported analyses, significant home visiting impacts were more favorable for children of depressed mothers or mothers with low psychological resources compared to other children (ACF, 2002; Kemp et al., 2011; Kitzman et al., 1997; Olds et al., 2007; Olds et al., 2004; Shaw, Dishion, Supplee, Gardner, & Arnds, 2006). No study reported significant, less favorable impacts for these children.

In studies where a significant, positive main effect was reported, nearly all tests of moderation showed that benefits were either limited to or stronger for children of depressed mothers or those with low psychological resources. Where the main effect was negative or was not reported, there was a significant, positive effect limited to the children of depressed mothers or mothers with low psychological resources in about a quarter of reported tests.

One study examined maternal relational health as a moderator of impacts on children's academic achievement and language development in early grade school (McFarlane et al., 2008). Home visiting had no main effects, but significantly improved these outcomes for children of mothers with relationship anxiety.

Two other studies jointly examined maternal depression and relational health as moderators. The first study assessed

Learn More

HOME VISITING EVIDENCE OF EFFECTIVENESS
http://homvee.acf.hhs.gov
The Home Visiting Evidence of Effectiveness is a comprehensive review of the literature on home visiting. The site has a search tool and provides links to summary, model, outcome domain, implementation profile, and reports.

THE HOME VISITING RESEARCH NETWORK
www.hvrn.org
The transdisciplinary Home Visiting Research Network aims to strengthen the role of home visiting as part of a comprehensive system of services for expectant families and families with young children. Its primary objectives are to develop and promote a national home visiting research agenda, advance the use of innovative research methods, provide a research environment supportive of the professional development of emerging researchers, and translate research findings into policy and practice.

DESIGN OPTIONS FOR THE MATERNAL, INFANT, AND EARLY CHILDHOOD HOME VISITING EVALUATION
www.acf.hhs.gov/sites/default/files/opre/dohve_design.pdf
This report provides a description of the preliminary design of the national evaluation of the MIECHV Program.

maternal relationship insecurity and depression as moderators of impacts on child cognitive and language development and involvement of the parent in play (Robinson & Emde, 2004). It found no evidence of moderation of impacts on child development, but revealed a significant, positive impact on involvement of the parent for children of mothers who were both depressed and insecure.

The second study examined maternal relationship avoidance and depression as moderators of impacts on child psychomotor and cognitive development and on internalizing and externalizing behaviors (Cluxton-Keller et al., 2013). It found that impacts were most favorable for children of mothers who were either depressed or avoidant, but not both depressed and avoidant.

Conclusion

This is an exciting stage in home visiting's evolution. Unprecedented federal investment is building the infrastructure to strengthen and broaden benefits for families by improving service models and implementation systems. This article reviewed evidence of the influence of maternal mental and relational health on home visiting services and impacts. To promote the translation of results, we addressed this issue in the context of the MIECHV Program—focusing primarily on evidence-based models and using the conceptual framework of the MIECHV Program's national evaluation and the Home Visiting Research Network.

Consider the results for service delivery. There is some evidence that mothers with poor mental health are more likely than others to enroll in home visiting. Among enrollees, maternal depression and relationship insecurity attenuate service involvement. Studies focused only on dosage yielded mixed results, but Robinson and Emde's (2002) composite measure of dosage and involvement explained why measures of dosage alone can be misleading. Their approach identified an important subgroup of mothers—those with a high dose of service but a superficial level of involvement. These mothers have high levels of discomfort with trust. Discomfort with trust is also associated with visit content, reflected in less use of problem-solving and supportive therapy and, for some highly insecure mothers, a focus narrowed on crisis intervention (Korfmacher et al., 1997). In conjunction with maternal depression, discomfort with trust compromises the bedrock of relationship-based programs, maternal trust in the home visitor (Cluxton-Keller et al., 2013).

What does research suggest about the association of maternal depression with service quality and coordination? First, home visitors often fail to recognize and respond to poor maternal mental health (Duggan et al., 2007; Duggan, Fuddy, et al., 2004). Second, home visiting has a smaller impact in linking depressed women than other women with needed community services (ACF, 2002). Third, many home visitors feel inadequately prepared to help families with mental health concerns (Duggan, Fuddy, et al, 2004; Tandon, Parillo, Jenkins, & Duggan, 2005).

Despite these challenges, evidence suggests home visiting can improve parenting behavior and child development, and that benefits can be even greater for these families because of their especially poor outcomes in the absence of intervention. But research also shows that home visiting is less effective for these families than others in improving family functioning outcomes such as maternal health and well-being, family relations, and maternal life course. In addition, home visiting may increase the likelihood of report to child welfare among depressed mothers (Easterbrooks, 2013).

How to proceed? In this era of results-based accountability, each stakeholder plays an essential role in improving services and outcomes for women with poor mental and relational health. At the national level, MIECHV Program leaders must continue to direct resources toward training, technical assistance, program monitoring, quality improvement, and research around maternal depression and relational health. State and implementing agency leaders must carefully explore options and make wise decisions about adopting, adapting, and implementing innovations to engage and broaden the benefits of home visiting for mothers with poor mental and relational health. As described in this issue by Perry, Tandon, Edwards, and Mendelson (p. 45); Beeber et al. (p. 35); and Ammerman, Putnam, Teeters, and Van Ginkel (p. 20), enhancement to home visiting for depressed mothers can potentially improve outcomes for these mothers and children.

Several factors limit the comparability of results across studies. Differences in how and when maternal depression was assessed, combined with different thresholds for defining depression, restricts the conclusion that may be made. In addition, for some studies, group size was a factor and limited the power to detect differences between groups. Some of these challenges may be addressed through the MIECHV Program that requires funded sites to improve outcomes for eligible families in six benchmark areas including maternal depression. The recommendation that programs assess maternal depression with valid measures, across multiple time points, using standard thresholds to determine depression will soon provide the opportunity for more careful study of its impact on an array of home visiting outcomes.

Local home visiting programs, networks, and researchers must work together to advance the field. The Home Visiting Research Network (2014) provides a blueprint for collaborative research to build workforce capacity, promote family engagement, and strengthen and broaden impacts for depressed mothers. Its Home Visiting Applied Research Collaborative (HARC) is a national practice-based research network. HARC's mission is to carry out trans-model research that is relevant to stakeholders and to translate results into policy and practice. HARC invites interested sites, networks, and researchers to learn more at the Home Visiting Research Network website and to join in research to ensure that home visiting achieves its potential in engaging and improving outcomes in families confronting poor maternal mental and relational health.

Elizabeth McFarlane, *MPH, PhD, is associate scientist in the Department of Population, Family and Reproductive Health at the Johns Hopkins Bloomberg School of Public Health and associate professor in the Office of Public Health Studies at the University of Hawaii. She is co-principal investigator on Hawaii's Evidenced-Based Home Visiting and Maternal, Infant, and Early Childhood Home Visiting Program evaluations and principal investigator on an Randomized Control Trial to prevent maternal depression in home visited women. She partners with families and community to inform developmental and implementation science and shape public policy to eliminate maternal and child health disparities.*

Sarah Shea Crowne, *PhD, is an assistant scientist in the Department of Population, Family and Reproductive Health at the Johns Hopkins Bloomberg School of Public Health. She is currently a core research team member of the Mother and Infant Home Visiting Program Evaluation, the national evaluation of the Maternal, Infant, and Early Childhood Home Visiting Program. She is also a management team member of the Home Visiting Research Network. Dr. Crowne has been a research team leader for the evaluation of New Jersey's ACF-funded Evidence-Based Home Visiting initiative and has participated in randomized trials of statewide home visiting programs in Hawaii and Alaska. Her research interests include the prevention of family violence, particularly child maltreatment, and its negative impact on child health and development among health disparities populations.*

Lori Burrell, *MA, LSW, is a research associate in the Department of Population, Family*

and Reproductive Health at the Johns Hopkins Bloomberg School of Public Health. She is currently a research team member of the Mother and Infant Home Visiting Program Evaluation, the national evaluation of the Maternal, Infant, and Early Childhood Home Visiting Program, and a research team member for the evaluation of New Jersey's Administration for Children and Families–funded Evidenced-Based Home Visiting initiative. Previously she was a lead team member in randomized trials of statewide home visiting programs in Hawaii and Alaska. Her research interests include the prevention of child maltreatment and the impact of early childhood abuse on mental health.

Anne Duggan, *ScD, is a professor in the Bloomberg School of Public Health and the School of Medicine at the Johns Hopkins University. She is co-principal investigator of the national evaluation of the Maternal, Infant, and Early Childhood Home Visiting Program, co-leads evaluation of statewide Maternal, Infant, and Early Childhood Home Visiting Program initiatives in several states, and is founding director of the national Home Visiting Research Network. She conducts and builds infrastructure for comparative effectiveness, dissemination, and implementation research to strengthen the benefits of home visiting and primary care for families. She helps decisionmakers use research to improve family engagement, service quality, and service coordination in taking evidence-based models to scale.*

References

Administration for Children and Families. (2002). *Making a difference in the lives of children and families: The impacts of Early Head Start Programs on young children and their families.* Washington, DC: US Department of Health and Human Services

Ammerman, R. T., Putnam, F. W., Teeters, A. F., & Van Ginkel, J. B. (2014). Moving Beyond Depression: A collaborative approach to treating depressed mothers in home visiting programs. *Zero to Three, 34*(5), 20–27.

Ammerman, R. T., Stevens, J., Putnam, F. W., Altaye, M., Hulsmann, J. E., Lehmkuhl, H. D., . . . & Van Ginkel, J. B. (2006). Predictors of early engagement in home visiting. *Journal of Family Violence, 21*, 105–115.

Avellar, S., Paulsell, D., Sama-Miller, E., & Del Grosso, P. (2013). *Home Visiting Evidence of Effectiveness Review: Executive summary.* Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

Beeber, L. S., Schwartz, T. A., Holditch-Davis, D., Canuso. R., Lewis, V., & Masuda, Y. (2014). Interpersonal psychotherapy with a parenting enhancement adapted for in-home delivery in Early Head Start. *Zero to Three, 34*(5), 35–44.

Berlin, L., Whiteside-Mansell, L., Roggman, L., Green, B., Robinson, J., & Spieker, S. (2011). Testing maternal depression and attachment style as moderators of Early Head Start's effects on parenting. *Attachment & Human Development, 13*(1): 49–67. doi:10.1080/14616734.2010.488122.

Bowlby, J. (1973). *Attachment and loss: Vol. 2. Separation.* New York, NY: Basic Books.

Cluxton-Keller, F., Burrell, L., Crowne, S., McFarlane, E., Tandon, S. D., Leaf, P. J., & Duggan, A. (2013). Maternal relationship insecurity and depressive symptoms as moderators of home visiting impacts on child outcomes. *Journal of Child and Family Studies.* DOI: 10.1007/s10826-013-9799-x

Damashek, A., Doughty, D., Ware, L., & Silovsky, J. (2011). Predictors of client engagement and attrition in home-based child maltreatment prevention services. *Child Maltreatment, 16*(1), 9–20.

Daro, D., Hart, B., Boller, K. & Bradley, M. C. (2012). *Replicating home visiting programs with fidelity: Baseline data and preliminary findings.* Children's Bureau, Administration for Children and Families, U.S. Department of Health and Human Services. Contract No.: GS-10F-0050L/HHSP233200800065W. Princeton, NJ: Mathematica Policy Research.

Duggan, A. K., Berlin, L. D., Cassidy, J., Burrell, L., & Tandon, S. D. (2009). Examining maternal depression and attachment insecurity as moderators of the impacts of home visiting for at-risk mothers and infants. *Journal of Consulting and Clinical Psychology, 77*(4), 788–799.

Duggan, A. K., Caldera, D., Rodriguez, K., Burrell, L., & Crowne, S. (2004). *Evaluation of the Healthy Families Alaska program.* Final report. Submitted to Alaska State Department of Health and Social Services, July 29, 2004.

Duggan, A., Caldera, D., Rodriguez, K., Burrell, L., Rohde, C., & Crowne, S. (2007). Impact of a statewide home visiting program to prevent child abuse. *Child Abuse & Neglect, 31*(8), 801–827.

Duggan, A. K., Fuddy, L., Burrell, L., Higman, S. M., McFarlane, E., Windham, A., & Sia, C. (2004). Randomized trial of a statewide home visiting program to prevent child abuse: Impact in reducing parental risk factors. *Child Abuse & Neglect, 28*, 623–643.

Duggan, A. K., Windham, A., McFarlane, E., Fuddy, L., Rohde, C., Buchbinder, S., & Sia, C. (2000). Hawaii's Healthy Start Program of home visiting for at-risk families: Evaluation of family identification, family engagement and service delivery. *Pediatrics, 105*, 250–259.

DuMont, K. Mitchell-Herzfeld, S., Greene, R., Lee, E., Lowenfels, A., Rodriguez, M., & Dorabawila, J. (2008). Healthy Familes New York (HFNY) randomized trial: Effects on early child abuse and neglect. *Child Abuse & Neglect, 32*, 295–315.

Easterbooks, A. M., Bartlett, J. D., Raskin, M., Goldberg, J., Contreras, M. M., Kotake, C., Chaudhuri, J. H., & Jacobs, F. H. (2013). Limiting home visiting effects: Maternal depression as a moderator of child maltreatment. *Pediatrics, 132*, S126–132. DOI: 10.1542/peds.2013-1021K.

Eckenrode, J., Ganzel, B., Henderson, C. R., Smith, E., Olds, D. L., Powers, J., Cole, R., ... Sidora, K. (2000). Preventing child abuse and neglect with a program of nurse home visitation: The limiting effects of domestic violence. *Journal of the American Medical Association, 284*, 1385–1391.

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine, 14*, 245–258.

Filene, J., Kaminski, Valle, L.A., & Cachat, P. (2013). Components associated with home visiting program outcomes: A meta-analysis. *Pediatrics, 132*, S100–108. DOI: 10.1542/peds.2013-1021H.

Girvin, H., DePanfilis, D., & Daining, C. (2007). Predicting program completion among families enrolled in a child neglect preventive intervention. *Research on Social Work Practice, 17*, 674–685.

Gomby, D. S., Culross, P. L., & Behrman, R. E. (1999). Home visiting: Recent program evaluations-analysis and recommendations. *Future of Children, 9*, 4–26, 195–223.

Heinicke, C. M., Goorsky, M., Moscov, S., Dudley, K., Gordon, J., Schneider, C., et al. (2000) Relationship-based intervention with at-risk mothers: Factors affecting variations in outcomes. *Infant Mental Health Journal, 21*, 133–155.

Home Visiting Research Network. (2014). *National home visiting research agenda.* Retrieved from www.hvrn.org/research-agenda.html

Josten, L. E., Savik, K., Anderson, M. R., Benedetto, L. L., Chabot, C. R., Gifford, M. J., . . . Frederickson, B. (2002). Dropping out of maternal and child home visits. *Public Health Nursing, 19*, 3–10.

Kemp, L., Harris, E., McMahon, C., Matthey, S., Vimpani, G., Anderson, T., Schmied, V., Aslam, H., & Zapart, S. (2011). Child and family outcomes of a long-term nurse home visitation programme: A randomised controlled trial. *Archives of Disease in Childhood, 96*, 533–540.

Kitzman, H., Olds, D. L., Henderson, C. R.,

Hanks, C., Cole, R., Tatelbaum, R., . . . Barnard, K. (1997). Effect of prenatal and infancy home visitation by nurses on pregnancy outcomes, childhood injuries, and repeated childbearing. A randomized controlled trial. *JAMA: The Journal of the American Medical Association, 278*(8), 644–652.

Korfmacher, J., Adam, E., Ogawa, J., & Egeland, B. (1997) Adult attachment: Implications for the therapeutic process in a home visitation intervention. *Applied Developmental Science, 1*(1), 43–52.

Korfmacher, J., Green, B., Staerkel, F., Peterson, C., Cook, G., Roggman, L., Faldowski, R. A., & Schiffman, R. (2008) Parent involvement in early childhood home visiting. *Child & Youth Care Forum, 37*(4), 171–196.

McCurdy, K., & Daro, D. (2001). Parent involvement in family support programs: An integrated theory. *Family Relations, 50*(2), 113–121.

McFarlane, E., Burrell, L., Crowne, S., Cluxton-Keller, F., Fuddy, L., Leaf, P. J., & Duggan, A. (2013). Maternal relationship security as a moderator of home visiting program impacts on maternal psychosocial functioning. *Prevention Science, 14*(1), 25–39.

McFarlane E., Burrell L., Leaf, P., Fuddy, L., Sia, C., Derauf, C., & Duggan A. (2008, May). *Maternal relationship security as a moderator of home visiting impact.* Paper presented at the Pediatric Academic Society Meetings. Honolulu, Hawaii.

Michalopoulos, C., Duggan, A., Knox, V., Filene, J. H., Lee, H., Snell, E. K., . . . Ingels, J. B. (2013). *Revised design for the Mother and Infant Home Visiting Program Evaluation.* OPRE Report 2013-18. Washington, DC: Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.

National Research Council & Institute of Medicine. (2000). *From neurons to neighborhoods: The science of early childhood development.* J. P. Shonkoff & D. A. Phillips, (Eds.), Board on Children, Youth, and Families; Commission on Behavioral and Social Sciences and Education. Washington, DC: National Academy Press.

National Research Council & Institute of Medicine. (2009). *Preventing mental, emotional, and behavioral disorders among young people: progress and possibilities.* M. E., O'Connell, T. Boat, & K. E. Warner, (Eds.), Committee on the Prevention of Mental Disorders and Substance Abuse Among Children, Youth, and Young Adults: Research Advances and Promising Interventions. Washington, DC: National Academies Press. Available from: www.ncbi.nlm.nih.gov/books/NBK32775/

O'Brien, R. A., Moritz, P., Luckey, D. W., McClatchey, M. W., Ingoldsby, E. M., & Olds, D. L. (2012). Mixed methods analysis of participant attrition in the nurse-family partnership. *Prevention Science, 13*(3), 219–228.

Olds, D. L., Holmberg, J. R., Donelan-McCall, N., Luckey, D. N., Knudtson, M. D. & Robinson, J. (2014). Effects of home visiting by paraprofessionals and by nurses on children; Follow-up of a randomized trial at age 6 and 9 years. *JAMA Pediatrics,168*(2),114–121. doi:10.1001/jamapediatrics.2013.3817.

Olds, D. L., Kitzman, H., Hanks, C., Cole, R., Anson, E., Sidora-Arcoleo, K., ...Bondy, J. (2007). Effects of nurse home visiting on maternal and child functioning: Age-9 follow-up of a randomized trial. *Pediatrics, 120*(4), e832–e845.

Olds, D. L., & Korfmacher, J. (1998). Maternal psychological characteristics as influences on home visitation contact. J*ournal of Community Psychology, 26*(1), 23–36.

Olds, D. L., Robinson, J., O'Brien, R., Luckey, D. W., Pettitt, L. M., Henderson, C. R., et al. (2002). Home visiting by paraprofessionals and by nurses: A randomized, controlled trial. *Pediatrics, 110*(3), 486–496.

Olds, D. L., Robinson, J., Pettitt, L., Luckey, D. W., Holmberg, J., Ng, R. K., et al. (2004). Effects of home visits by paraprofessionals and by nurses: Age 4 follow-up results of a randomized trial. *Pediatrics, 114*(6), 1560–1568.

Perry, D. F., Tandon, S. D., Edwards, K., & Mendelson, T. (2014). Preventing perinatal depression through home visiting: The Mothers and Babies Course. *Zero to Three, 34*(5), 45–51.

Robinson, J. L., & Emde, R. N. (2004). Mental health moderators of Early Head Start on parenting and child development: Maternal depression and relationship attitudes. P*arenting: Science and Practice, 4*(1), 73–97.

Robinson, J. L., Korfmacher, J., Green, S., Song, N., Soden, R., & Emde, R. (2002). Predicting program use and acceptance by parents enrolled in Early Head Start. *NHSA Dialog, 5*(2&3), 311–324.

Shaw, D. S., Dishion, T. J., Supplee, L., Gardner, F., & Arnds, K. (2006). Randomized trial of a family-centered approach to the prevention of early conduct problems: 2-year effects of the family check-up in early childhood. *Journal of Consulting and Clinical Psychology, 74*(1), 1–9.

Smith, K. E., Landry, S. H., & Swank, P. R. (2005). The influence of decreased parental resources on the efficacy of a responsive parenting intervention. *Journal of Consulting and Clinical Psychology, 73*(4), 711–720.

Smith, S. A., & Moore, E. J. (2012). Health literacy and depression in the context of home visitation. *Maternal and Child Health Journal, 16*, 1500–1508.

Spieker, S. J., Solchany, J., McKenna, M., DeKlyen, M., & Barnard, K. B. (2000). The story of mothers who are difficult to engage. In J. D. Osofsky & H.I. Fitzgerald (Eds.), *World Association of Infant Mental Health handbook of infant mental health, Vol 3: Parenting and child care* (pp. 172–209). New York, NY: John Wiley & Sons.

Sweet, M. A., & Appelbaum, M. I. (2004). Is home visiting an effective strategy? A meta-analytic review of home visiting programs for families with young children. *Child Development, 75*, 1435–1456.

Tandon, S. D., Parillo, K. M., Jenkins, C., & Duggan, A. K. (2005). Formative evaluation of home visitors' role in addressing poor mental health, domestic violence, and substance abuse among low-income pregnant and parenting women. *Maternal and Child Health Journal, 9*, 273–283.

United States Congress (2010, March 23,). *Patient Protection and Affordable Care Act*, Public Law No. 111-148, Government Publications Office. Retrieved from http://frwebgate.access.gpo.gov/cgibin/getdoc.cgi?dbname=111_cong_bills&docid=f:h3590enr.txt.pdf

ZERO TO THREE®

NEW! From ZERO TO THREE

LET'S PLAY!

Let's Play! is a **free** parenting app from ZERO TO THREE with fun activities, organized by age and routine, for parents to use to support their young child's early learning.

Available to download from iTunes and the Google Play Store. Search for "Zero to Three"

Available on the iPhone App Store

ANDROID APP ON Google play

FREE

With **Let's Play!** you can:

- ***Choose fun activities that promote early learning for children from birth to 5***
- ***Take photos to remember***
- ***Share the activities***

Download Let's Play! with these QR codes by using a QR code reader/scanner app on your smartphone.

Made possible through a grant from Motorola Mobility Foundation.

Visit: www.zerotothree.org/tips-for-play for more information

Learn more at www.ZEROTOTHREE.org

Costs and Benefits of Treating Maternal Depression

LISA SONTAG-PADILLA
TARA LAVELLE
DANA SCHULTZ
RAND Corporation
Pittsburgh, Pennsylvania

Depression affects millions of Americans each year and is much more likely to affect women (Gaynes et al., 2005; Kessler et al., 2003; Kessler, Chiu, Demler, & Walters, 2005). Women of reproductive age (15 to 45 years old) are twice as likely to suffer from depression as are similarly aged men (Gaynes et al., 2005; Kessler, et al., 1994). In the first year following childbirth, 7–13% of women experience depression (Gaynes et al., 2005). Moreover, each year, more than 400,000 babies are born to women already experiencing depression (Earls, 2010), and an estimated 15 million children live with a mother experiencing depression (National Research Council & Institute of Medicine, 2009).

Untreated depression has potentially serious consequences for a woman's overall well-being. However, when caring for a child, these consequences extend beyond the individual and significantly affect her functioning as a parent, the family's functioning, and her child's development (Cummings, Schermerhorn, Keller, & Davies, 2008; Elgar, Mills, McGrath, Waschbusch, & Brownridge, 2007; Goodman & Gotlib, 1999; Lim, Wood, & Miller, 2008; Onunaku, 2005; Field, 2000). Given the potentially serious two-generational consequences of maternal depression (Cummings et al., 2008; Elgar et al., 2007; Field, 2000; Goodman & Gotlib, 1999; Lim, Wood, & Miller, 2008; Onunaku, 2005), identifying and treating maternal depression is critical to improving short- and long-term outcomes for both mothers and their children (Center on the Developing Child at Harvard University, 2009; Cicchetti, Rogosch, & Toth, 2000; Clark, Tluczek, & Wenzel, 2003). Further, the potential impact of maternal depression on both the mother and the child has significant societal and financial cost implications (Kessler, 2012; Wang et al., 2006).

In an effort to shed light on the potential value of treating maternal depression, we begin by summarizing the evidence of the negative implications of maternal depression for both mothers and children. Then we discuss depression treatment, efficacy, and cost-effectiveness, and highlight the current knowledge and gaps as they relate to maternal depression. Here, we focus on treatments for depressed women engaged in actively raising a child 18 years old or younger, as these are the most formative years of development and have the gravest potential consequences.

Impact of Maternal Depression

The burden of depression is increasingly well understood, but the ways in which depression affects parenting and children's health and psychological well-being are often overlooked. Maternal depression poses a serious risk for the mother and for healthy child development by compromising the quality of the parent–child relationship during critical years of development (Cummings et al., 2008; Elgar et al., 2007; Goodman & Gotlib, 1999; Lim et al., 2008; Lovejoy, Graczyk, O'Hare, & Neuman, 2000). While it is difficult to estimate the true costs of depression in mothers and their children, it is essential to consider not only the impact of depression on individual family members but also on the family as a whole. Broadening the focus beyond the symptoms and diagnosis of

Abstract

An estimated 15 million mothers with young children in the U.S. suffer from depression. Untreated maternal depression has serious consequences for the mother's long-term health and for her child's development and functioning. It can also be costly, driving up health care use, reducing employment, and creating the need for early childhood interventions. Treatments for depression, usually combining medication and psychotherapy, have been proven effective in the general population, but there is limited evidence for how much they help mothers and for their cost-effectiveness. Stronger evidence about what works in treating maternal depression, and the value of alternative treatment options, could inform best practices and improve the lives of millions of mothers and children.

depression in just the mother to a two-generational (mother–child) perspective may illuminate the larger possible impacts on not only family development (i.e., individual and social capital, resource allocation) but also societal and economic costs (see Figure 1). In this section, we describe the impact maternal depression may have on the mother and child as well as the potential economic impact of maternal depression.

Impact on Mother

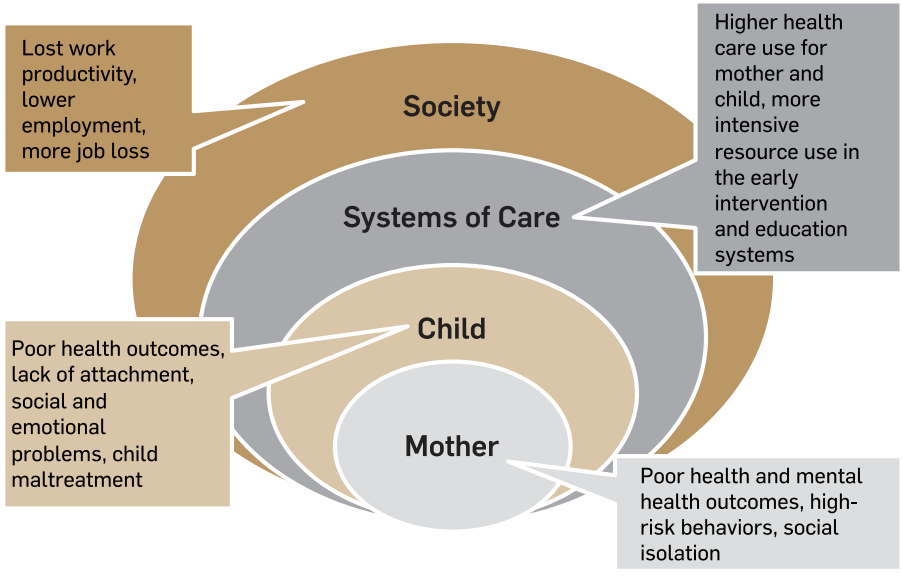
For most individuals, depression is characterized by cycles of relapse and remittance over the lifetime. On average, adults who have one episode of major depression will have at least five episodes across their lifetime (Pepper & Maack, 2009). About 20% of those who recover from an episode (remission of symptoms for at least 8 weeks) will have a recurrence within 1 year; the rate of recurrence increases with subsequent episodes (Pepper & Maack, 2009). Common symptoms of depression include prolonged periods of depressed or irritable mood, fatigue, loss of interest in activities, changes in sleep or appetite, feelings of guilt or worthlessness, or thoughts of harming oneself or someone else. These factors typically amplify stress and negatively impact one's ability to cope, in turn severely affecting one's quality of life (National Research Council & Institute of Medicine, 2009).

Many negative consequences follow from depression, including co-occurring medical and psychiatric disorders (e.g., substance abuse), economic and social disadvantages, conflicted or unsupportive relationships, and decreased community engagement (Chapman, Perry, & Strine, 2005; National Research Council & Institute of Medicine, 2009), all of which are crucial supports during the early years of motherhood. Although research focusing specifically on women is limited, studies show that depressed women are more likely to have cardiovascular disease (Farr, Hayes, Bitsko, Bansil, & Dietz, 2011; Pan, Sun, Okereke, Rexrode, & Hu, 2011; Wuslin, 2004), stroke (Rexrode, 2010), and type-2 diabetes (Bowers et al., 2013; Farr et al., 2011; Mezuk, Eaton, Albrecht, & Golden, 2008; Pan et al., 2011). Depression is also associated with an increase in chronic disease risk factors, such as obesity, smoking, and substance abuse in women (Farr et al., 2011).

Impact on Child

Exposure to maternal depression and the associated "toxic stress" have grave consequences for healthy child development. Healthy brain development during early childhood requires a "serve and return" pattern of interactions (i.e., caregivers are sensitive and responsive to a young child's signals) between caregivers and their infants (Center on the Developing Child at Harvard University, 2009; Tronick, 2007). These interactions help develop key connections in the child's brain that aid in developing secure attachment styles, healthy stress response mechanisms, speech, and other cognitive skills, all of which are the building blocks of healthy child development. However, depression may interfere with a caregiver's ability to engage in these interactions (Center on the Developing Child at Harvard University, 2009; Tronick, 2007), placing infants at risk for delayed cognitive and behavioral development (Diego, Field, & Hernandez-Reif, 2005; Murray & Cooper, 1997; Paulson, Dauber, & Leiferman, 2006) or social and behavioral problems down the line. For instance, children of depressed mothers experience more social and emotional problems than children whose mothers are not depressed (Moore, Cohn, & Campbell, 2001; Whitaker, Orzol, & Kahn, 2006). Moreover, these problems often last well beyond early childhood and may result in longer-term impairments in cognitive and linguistic development and social skills (Downey & Coyne, 1990; Grace, Evindar, & Stewart, 2003). Children of mothers with continued depression are more likely to develop long-term behavioral problems and are at greater risk of developing mental health conditions, including depression, anxiety, and deviant or aggressive behavioral problems later in life (Beck, 1999; Weissman et al., 2006). Researchers have also found connections between maternal depression and chronic childhood health problems such as obesity and asthma (Pak & Allen, 2012; Surkan, Radestad, Cnattingius, Steineck, & Dickman, 2009). Untreated maternal depression may also increase a child's risk for maltreatment and neglect (Collishaw, Dunn, O'Connor, Golding, & the Avon Longitudinal Study of Parents and Children Study Team, 2007; Hazen, Connelly, Kelleher, Barth, & Landsverk, 2006; Koverola et al., 2005; Taylor, Guterman, Lee, & Rathouz, 2009) because of the mother's lack of attentiveness and responsiveness associated with depression (Diego et al., 2005).

Figure 1. Societal and Economic Costs of Maternal Depression



Economic Costs of Maternal Depression

Maternal depression has economic consequences as well. Research has shown that depression is associated with an increase in health care use. Previous studies in the U.S., Canada, Australia, and the U.K. have shown that women suffering from postpartum depression are more likely to visit a general practitioner (Dennis, 2004; Webster et al., 2001;), use the emergency department (Dagher, McGovern, Dowd, & Gjerdingen, 2012), seek mental health treatment, (Dagher et al., 2012; Webster et al., 2001), and use community care services (Petrou, Cooper, Murray, & Davidson, 2002) compared to their nondepressed counterparts. However, studies have not established the extent to which overall health care use is driven by treatment of depression or the use of other services that may decrease with the proper management of symptoms.

The economic impact of maternal depression is further amplified through effects on labor and workforce costs. Depressed mothers are more likely to be unemployed (20% vs. 8% for nondepressed mothers) and less likely

Photo: ©iStockphoto.com/kewebeboy

Untreated depression has potentially serious consequences for a woman's overall well-being.

to be employed full-time (40% vs. 52% for nondepressed mothers; Ertel, Rich-Edwards, & Koenen, 2011). In the general population, depression is associated with decreased work productivity or impaired work performance (i.e., getting less accomplished in a defined period of time) and increased absenteeism (Rost, Smith, & Dickinson, 2004). In addition, depression has been shown to be predictive of greater work disability in the short term and of lower income over time (Kawakami et al., 2012; Lepine & Briley, 2011). Moreover, treatment of depression has been shown to improve work productivity and decrease absenteeism (Rost et al., 2004; Schoenbaum et al., 2002; Wang et al., 2006). Although causal relationships have not been established, longitudinal research has confirmed that depressed women are more likely to lose employment and less likely gain employment over time (Mascaro, Arnette, Santana, & Kaslow, 2007).

The economic consequences of maternal depression extend to the costs associated with premature birth or birth complications, as well as the child's use of health care. Babies born to depressed women are more likely to be premature (Li, Liu, & Odouli, 2009; Orr, James, & Blackmore Prince, 2002) and are at greater risk of being small for gestational age (U.S. Department of Health and Human Services, Office of Women's Health, 2009); both these factors increase the likelihood of neonatal intensive care unit (NICU) stays, which are costly. One analysis estimated that the cost of a night in the NICU was nearly 2.4 times the cost of a regular nursery night (Adams et al., 2002) with NICU stays typically lasting several weeks for most babies. Research has also indicated that parental depression is associated with a child's higher use of emergency department visits, sick visits, specialty department visits, and inpatient services (Sills, Shetterly, Xu, Magid, & Kempe, 2007). Maternal depression in particular has been associated with increased child hospitalizations (Chung, McCollum, Elo, Lee, & Culhane, 2004) and emergency room visits (Flynn, Davis, Marcus, Cunningham, & Blow, 2004; Kornfeld, Bair-Merritt, Frosch, & Solomon, 2012). A study of children with diabetes found that maternal depression predicted increased usage of emergency and inpatient services over the 2-year follow-up period (Clayton et al., 2013). This increased use of care was not associated with any observed clinical need for these services and suggests that at least a portion of the increased use of health care services among children of depressed mothers may be avoidable.

Beyond health care, maternal depression may also lead to additional resource use in the early intervention and special education systems because of an elevated risk for developmental delays such as those affecting speech, motor skills, and other cognitive functions. Additional resources may also be used for child welfare services, because of the increased risk of child abuse and neglect. More research is needed to shed light on how the level of service-use in these sectors by children of depressed mothers may differ from those of nondepressed mothers.

Treatment of Maternal Depression

Maternal depression has multiple and far-reaching negative effects on both the mother and child. Treating maternal depression may reduce the prevalence of certain disease conditions and poor birth outcomes, potentially offsetting some of the associated short-term and long-term costs. In this section, we highlight the various treatment options and their efficacy for reducing depression among mothers, and we discuss the literature on the cost-effectiveness of treating maternal depression.

Treatment Options and Efficacy

Treatment options for maternal depression include antidepressants, psychotherapy, and psychosocial or behavioral interventions. We describe each of these briefly, then discuss what is known about their efficacy.

ANTIDEPRESSANTS. Antidepressants are among the most widely used treatments for depression. Despite limited data, selective serotonin reuptake inhibitors (SSRI), a class of antidepressants that increase the level of serotonin in the brain, are generally considered to be safe during both the prenatal and postpartum periods (National Resource Council & Institute of Medicine, 2009), although they are not necessarily the first choice for depressed mothers in this time period. Antidepressants have been found to be effective in treating depression in the general adult population (Gartlehner et al., 2007). Prescription antidepressants can reduce depressive symptoms for women during the postpartum period (Ng, Hirata, Yeung, Haller, & Finley, 2010).

PSYCHOTHERAPY. Psychotherapy provides another option for treating maternal depression, particularly for pregnant women and women who are breastfeeding, as some women are concerned the potential harm of antidepressants on the developing child. Psychotherapy is also often used in conjunction with medication (DelRosario, Chang, & Lee, 2013). Among psychotherapies, cognitive-behavioral therapy (CBT) works to combat harmful assumptions and beliefs associated with depression that interfere with recovery. Interpersonal psychotherapy (IPT) is a highly structured treatment that focuses on improving the stress related to social and interpersonal relationships (National Resource Council & Institute of Medicine, 2009). IPT and CBT have been shown to be effective in reducing depressive symptoms during the postpartum period (Dennis & Hodnett, 2007; O'Hara & McCabe, 2013). Group-based psychotherapy and CBT delivered in a group format can reduce depressive symptoms among postpartum women and may provide women with peer and social support that contribute to overall improvement in maternal outcomes (Goodman & Santangelo, 2011; Scope et al., 2013). Although the effectiveness of psychotherapies in treating postpartum depression has been established, less is known about the efficacy of psychotherapy for depressed women during the prenatal period (Muñoz, Cuijpers, Smit, Barrera, & Leykin, 2010; O'Hara & McCabe, 2013). A handful of studies that evaluated the prevention of major

depression during the prenatal period have been identified in recent meta-analyses (Cuijpers, Brännmark, & van Straten, 2008; Muñoz et al., 2010). Although a few of these studies suggested the effectiveness of depression prevention efforts during the prenatal period (Elliot et al., 2000; Lara, Navarro, & Navarette, 2009; Zlotnick, Miller, Pearlstein, Howard, & Sweeney, 2006), the findings are based on small sample sizes and used psychoeducational sessions rather than IPT or CBT, tempering the ability to draw conclusions about treatment during the prenatal period.

PSYCHOSOCIAL OR BEHAVIORAL INTERVENTIONS. These interventions can include a range of services such as nondirective counseling, different types of support programs, and home visiting programs (Dennis & Hodnett, 2007). Both the setting and providers for these interventions vary widely. Nondirective counseling involves a counselor listening to the woman and helping her understand her thoughts and emotions, but not providing guidance or opinions (Leis, Mendelson, Tandon, & Perry, 2009). Support programs can take different forms, including peer or parent support groups that focus on bringing together those with similar experiences to share and support one another. With home visiting programs, pregnant women or new mothers receive regular visits from professionals or paraprofessionals (Leis et al., 2009). The focus and desired outcomes from these programs vary widely. Providing in-home services to mothers in need may help address some of the typical barriers to engaging in services or treatment, such as lack of transportation, difficulty obtaining child care, the stigma associated with going to a clinic for mental health treatment, and the barrier of depression itself, which can make it difficult to attend traditional outpatient treatment. The evidence of the efficacy of psychosocial interventions to remediate maternal depression is limited, but in general home visiting by itself has not been found to reduce maternal depressive symptoms (Ammerman, Putnam, Bosse, Teeters, & Van Ginkel, 2010). Results from studies of home-based nondirective counseling interventions have been mixed (Leis et al., 2009). Promising approaches outlined in this issue (Ammerman, Putnam, Teeters, & Van Ginkel, this issue, p. 20; Beeber et al., this issue, p. 35; Perry, Tandon, Edwards, & Mendelson, this issue p. 45) demonstrated the potential for enhancements of home visiting programs to effectively address maternal depression.

Cost-Effectiveness of Treating Maternal Depression

The costs of these different treatment options vary depending on the intensity, duration, and setting of the treatment program. Cost-effectiveness studies characterize the value of health care programs by comparing the relative costs and outcomes of alternative health care strategies. To better understand the benefit gained from resources invested in a program or therapy, many studies have evaluated the cost-effectiveness of treatment programs for depression (Barrett, Byford, & Knapp, 2005), but fewer have looked at the cost-effectiveness of programs specifically for women and mothers.

> The burden of depression is increasingly well understood, but the ways in which depression affects parenting and children's health and psychological well-being are often overlooked.

Only one study in the past 10 years has looked specifically at the cost-effectiveness of treating maternal depression, and it found that group CBT, a form of psychotherapy, did not appear to be a cost-effective treatment option for maternal depression in the U.K. Stevenson and colleagues used a modeling-based approach to estimate the cost-effectiveness of treating maternal depression following childbirth with group CBT compared with routine primary care in the U.K. (Stevenson, Scope, & Sutcliffe, 2010). In this study, group CBT consisted of a 2-hour group therapy session that women attended once per week for 12 weeks in groups of 8 participants. The study found that the group CBT cost £1,500 ($2,170 U.S. dollars) per person but produced only a modest reduction in depressive symptoms over 1 year that led to a gain of 0.032 quality-adjusted life years (QALY) in the CBT group compared with the routine primary care group. A QALY weights a year of life lived by the quality of life of that year; a year lived in perfect health is worth 1 QALY , while a year of life lived in less than perfect health is worth less than 1 QALY. On the basis of the cost and modest reduction in symptoms, this group CBT intervention was not found to be a good value in the U.K. health care system. However, it is worth noting that the primary analysis did not consider any treatment benefits beyond those to the mother. When a secondary analysis in this study accounted for additional treatment benefits to another family member such as the child, the intervention was found to be more favorable in terms of its cost-effectiveness.

Given the limited evidence available for the cost-effectiveness of programs for maternal depression specifically, we also searched for studies of the cost-effectiveness of depression treatment programs for women. We identified four studies that evaluated the cost-effectiveness of alternative treatments for depression in low-income women; two were conducted in the U.S. and two in Chile. In one study Beil and colleagues (Beil, Beeber, Schwartz, & Lewis, 2013) compared the costs and effectiveness of in-home IPT, which consisted of one-on-one counseling in the home, office-based CBT, and drug therapy over a 3-year period for low-income women 19–35 years old in the U.S. In-home IPT was found to have the highest costs per person ($4,210) and also the highest effectiveness (producing 545 depression-free days) over a 3-year follow-up period, followed by drug therapy ($2,087; 449 depression-free days) and office-based CBT ($1,323; 344 depression-free days). On the basis of these findings, drug therapy was considered a cost-effective option when compared to office-based CBT. And although more costly, IPT was found to be a cost-effective treatment option when compared with drug therapy (Beil et al., 2013). The results of this study indicated that for treating depression in low-income women, both in-home IPT and drug therapy are a good value in the U.S. health care system, with the preferred therapy likely being in-home IPT because of its higher effectiveness.

A study by Revicki and colleagues (2005) documented the cost-effectiveness of various options to treat depression in low-income women in the U.S. over a 12-month follow-up period, including office-based CBT, drug therapy, and a "community referral" option in which women were educated on depression treatment options and referred to community providers (Revicki et al., 2005). In this study, women randomized to drug therapy had the highest total costs over the 12-month follow up period ($1,997) followed by CBT ($1,844) and community referral ($1,245). Women randomized to drug therapy or CBT also exhibited greater improvements in their depressive symptoms over the year with a mean of 258 and 251 depression-free days in the drug therapy and CBT groups respectively, compared with 225 depression-free days in the community referral group. Drug therapy and CBT were found to be cost-effective options when compared to community referral (Revicki et al., 2005). No cost-effectiveness comparisons were conducted between CBT and drug therapy directly.

Two cost-effectiveness studies of primary care interventions for low-income women with depression in Chile demonstrated the favorable cost-effectiveness of adding stepped care (treatments are introduced in

Photo: ©iStockphoto.com/laflor

Support programs can take different forms, including peer or parent support groups that focus on bringing together those with similar experiences to share and support one another.

a stepwise manner where more-intensive treatments are generally reserved for people who do not benefit from simpler first-line treatments) with educational and support services to standard primary care treatments for depression, which typically include medical office visits, antidepressant drugs, therapy, or specialist referral (Araya, Flynn, Rojas, Fritsch, & Simon, 2006; Siskind, Araya, & Kim, 2010). In one study, Siskind et al. (2010) found that treating depressed women in Chile with standard primary care services, at an additional cost equivalent to $15 per person, led to a 5% reduction in lifetime depressive episodes when compared to no treatment. Again compared to no treatment, stepped care produced a 7% reduction in lifetime depressive episodes for the equivalent of an additional $41 per person (Siskind et al., 2010). Araya et al. (2006) found that with an additional cost of 10,855 pesos ($37.60) over a 6-month follow-up period, women randomized to stepped-care had 50.4 additional depression-free days compared to the standard primary care group (Araya et al., 2006). Costs and effects reported in these studies are specific to the Chilean health care system, and are not generalizable to the context of the U.S. health care system. Both studies suggested that stepped care may be considered a good value for treating women with depression in the Chilean health care system.

Although sparse, these findings suggested that in the setting in which they were studied, treatment options that reduce barriers to women receiving care such as in-home IPT, as well as certain office-based services, may prove to be cost-effective approaches to reducing the incidence of depression.

Building an Evidence-Base for Cost-Effective Treatment

Depression affects millions of Americans each year and imposes significant societal and financial costs (Kessler, 2012; Wang et al., 2006). Given that women are almost twice as likely to experience depression as men (Gaynes et al., 2005; Kessler et al., 2003; Kessler et al., 2005) and that the majority of women 15 to 50 years old have children (U. S. Census Bureau, 2012), maternal depression is an important and potentially costly issue. Our review revealed limited evidence regarding the cost-effectiveness of maternal depression treatment options. Emerging evidence regarding the cost-effectiveness of treatments for depression in women, more generally, has identified certain strategies that have shown potential to be cost-effective, including IPT, CBT, drug therapy, and stepped primary care, but this evidence base is limited as well and currently applies only to the populations and settings studied. A larger amount of evidence on the cost-effectiveness of treating depression is available from the general population of adults. Among this larger group, newer antidepressants appear to be a cost-effective treatment option, particularly when compared to older drugs (Barrett et al., 2005). Collaborative care approaches, which typically use case managers to provide support to patients and link primary care providers, patients, and mental health specialists to provide more integrated care (Gilbody, Bower, & Whitty, 2006; van Steenbergen-Weijenburg et al., 2010), have also shown favorable cost-effectiveness results among adults in general. But gaps remain in this literature as well. For example, there is limited evidence on the cost-effectiveness of psychotherapy when compared to antidepressants or usual care (Barrett et al., 2005; Bosmans et al., 2008; Churchill et al., 2001), although evidence for the cost-effectiveness of certain strategies such as group and individual CBT is emerging in certain settings such as Australia and the U.K. (McCrone et al., 2004; Sanderson, Andrews, Corry, & Lapsley, 2003; Scott, Palmer, Paykel, Teasdale, & Hayhurst, 2003; Vos, Corry, Haby, Carter, & Andrews, 2005). In these countries, evidence regarding the favorable cost-effectiveness of CBT has led to increases in the availability of these services to those with public health insurance (Payne & Myhr, 2010).

There is a clear need for additional research regarding the cost-effectiveness of treatment programs for maternal depression. As evidence continues to emerge, it is important to note the differences between the potential costs and benefits of treatments for maternal depression and those for interventions in the adult population in general, and the need to account for these differences in future cost-effectiveness analyses of maternal depression. For example, treatment programs designed specifically for maternal depression may have additional upfront costs related to child care services, as well as service-related costs for in-home or mobile treatment services. However, given the evidence outlined above regarding the link between maternal and child health and developmental outcomes, the total benefits of treating depression may be larger in a maternal population compared with a non-parent adult population. Treating maternal depression may lead to additional downstream cost savings due to a decreased need and use of support services for both the mother and child. In addition, treatment-related improvements in health and quality of life outcomes should be accounted for in both mother and child. Cost-effectiveness analyses

Learn More

Depression in Parents, Parenting, and Children: Opportunities to Improve Identification, Treatment, and Prevention
National Research Council (2009)
Washington, DC: The National Academies Press.

Helping Families Raise Healthy Children
www.rand.org/health/projects/healthy-children.html

Center on the Developing Child
http://developingchild.harvard.edu

that do not consider these broader family-level benefits of treatment will undervalue interventions for maternal depression. In all of the studies included in our review, none accounted for potential child or family level benefits in the primary study. The study by Stevenson and colleagues (2010) accounted for additional treatment benefits in a secondary analysis and found maternal depression treatment to be more cost-effective when additional family benefits were considered, highlighting the importance of this inclusion. Providing additional evidence regarding the value of treating maternal depression may incentivize its broader provision.

Limitations of Current Literature Base

The limited research on the cost-effectiveness of treating maternal depression may be due in part to the limited evidence available to inform this research question, such as evidence related to the longitudinal impacts of maternal depression, and the beneficial impact that treatment may provide to both the mother and the child. Where there is evidence of the impact of maternal depression on the mother and the child, most of these studies are correlational and not causal. Also, much of the evidence in the literature regarding the impact of maternal depression, particularly regarding its impact on the mother's health care usage, focuses on the period following childbirth only (Dagher et al., 2012; Dennis, 2004; Petrou et al., 2002; Webster et al., 2001). These findings may not reflect the toll that maternal depression takes in later years. Finally, as noted above, most studies on the cost-effectiveness of treating maternal depression conducted to date do not consider treatment benefits beyond those to the mother, neglecting the potential benefits of treating maternal depression for the child.

Conclusions

Future work is needed to establish the cost-effectiveness of maternal treatment programs. This work should consider the broad benefits of treatment for both the mother and child. To date, very few studies have directly assessed the impact that treating maternal depression has on the outcomes of the child as well as the mother and this limits the availability of evidence to inform future cost-effectiveness analyses of maternal depression. Additional research is needed to provide evidence on both the child and maternal outcomes associated with maternal depression treatment programs. This work should examine the benefits of treatment in terms of improved health for the mother and child, as well as the potential downstream reduction in the use of services associated with improved health.

Lisa Sontag-Padilla, *PhD, is an associate behavioral/social scientist at RAND Corporation, with expertise in child development, mental health, and program evaluation. Much of her work at RAND has focused on quantitative and qualitative approaches to assessing the implementation and delivery of evidence-based interventions across multiple systems with varied processes and implementation strategies.*

Tara Lavelle, *PhD, is an associate policy researcher at the RAND Corporation. She has experience conducting economic evaluations of health interventions and assessing quality of life outcomes in adults, children, and families.*

Dana Schultz, *MPP, is a senior policy analyst at the RAND Corporation with expertise in research design, program evaluation, data collection, and analysis. Her research focuses on maternal and child health, children's exposure to violence, and child and adolescent well-being. She has led or co-led several projects to document implementation and assess effectiveness of maternal and child health interventions.*

References

Adams, E. K., Miller, V. P., Ernst, C., Nishimura, B. K., Melvin, C., & Merritt, R. (2002). Neonatal health care costs related to smoking during pregnancy. *Health Economics, 11*(3), 193–206.

Ammerman, R. T., Putnam, F. W., Bosse, N. R., Teeters, A. R., & Van Ginkel, J. B. (2010). Maternal depression in home visitation: A systematic review. *Aggression and Violent Behavior, 15*(3), 191–200.

Ammerman, R. T., Putnam, F. W., Teeters, A. R., & Van Ginkel, J. B. (2014). Moving Beyond Depression: A collaborative approach to treating depressed mothers in home visiting programs. *Zero to Three, 34*(5), 20–27.

Araya, R., Flynn, T., Rojas, G., Fritsch, R., & Simon, G. (2006). Cost-effectiveness of a primary care treatment program for depression in low-income women in Santiago, Chile. *American Journal of Psychiatry, 163*(8), 1379–1387.

Barrett, B., Byford, S., & Knapp, M. (2005). Evidence of cost-effective treatments for depression: A systematic review. *Journal of Affective Disorders, 84*(1), 1–13.

Beck, C. T. (1999). Maternal depression and child behaviour problems: A meta-analysis. *Journal of Advanced Nursing, 29*(3), 623–629.

Beeber, L. S., Schwartz, T. A., Holditch-Davis, D., Canuso, R., Lewis, V., & Matsuda, Y. (2014). Interpersonal psychotherapy with a parenting enhancement adapted for in-home delivery in Early Head Start. *Zero to Three, 34*(5), 35–44.

Beil, H., Beeber, L. S., Schwartz, T. A., & Lewis, G. (2013). Cost-effectiveness of alternative treatments for depression in low-income women. *Journal of Mental Health Policy and Economics, 16*(2), 55–65.

Bosmans, J. E., van Schaik, D. J., de Bruijne, M. C., van Hout, H. P., van Marwijk, H. W., van Tulder, M. W., & Stalman, W. A. (2008). Are psychological treatments for depression in primary care cost-effective? *Journal of Mental Health Policy and Economics, 11*(1), 3–15.

Bowers, K., Laughon, S. K., Kim, S., Mumford, S. L., Brite, J., Kiely, M., & Zhang, C. (2013). The association between a medical history of depression and gestational diabetes in a large multi-ethnic cohort in the United States. *Paediatric and Perinatal Epidemiology, 27*(4), 323–328.

Center on the Developing Child at Harvard University. (2009). *Maternal Depression Can Undermine the Development of Young Children: Working Paper No. 8.* Retrieved from www.developingchild.harvard.edu

Chapman, D. P., Perry, G. S., & Strine, T. W. (2005). The vital link between chronic disease and depressive disorders. *Preventing Chronic Disease, 2*(1), 1–10.

Chung, E. K., McCollum, K. F., Elo, I. T., Lee, H. J., & Culhane, J. F. (2004). Maternal depressive symptoms and infant health practices among low-income women. *Pediatrics, 113*(6), e523–e529.

Churchill, R., Hunot, V., Corney, R., Knapp, M., McGuire, H., Tylee, A., & Wessely, S. (2001). A systematic review of controlled trials of the effectiveness and cost-effectiveness of brief psychological treatments for depression. *Health Technology Assessment, 5*(35), 1–173.

Cicchetti, D., Rogosch, F. A., & Toth, S. L. (2000). The efficacy of toddler-parent psychotherapy for fostering cognitive development in offspring of depressed mothers. *Journal of Abnormal Child Psychology, 28*(2), 135–148.

Clark, R., Tluczek, A., & Wenzel, A. (2003). Psychotherapy for postpartum depression: a preliminary report. *American Journal of Orthopsychiatry, 73*(4), 441–454.

Clayton, K. M., Stewart, S. M., Wiebe, D. J., McConnel, C. E., Hughes, C. W., & White, P. C. (2013). Maternal depressive symptoms predict adolescent healthcare utilization and charges in youth with type 1 diabetes (T1D). *Health Psychology, 32*(9), 1013–1022.

Collishaw, S., Dunn, J., O'Connor, T. G., Golding, J., & the Avon Longitudinal Study of Parents and Children Study Team. (2007). Maternal childhood abuse and

offspring adjustment over time. *Development and Psychopathology, 19*, 367–383.

Cuijpers, P., Brännmark, J.G., & van Straten, A. (2008). Psychological treatment of postpartum depression: A meta-analysis. *Journal of Clinical Psychology, 64*(1), 103–118.

Cummings, E. M., Schermerhorn, A, C., Keller, P. S., & Davies, P. T. (2008). Parental depressive symptoms, children's representations of family relationships, and child adjustment. *Social Development, 17*(2), 278–305.

Dagher, R. K., McGovern, P. M., Dowd, B. E., & Gjerdingen, D. K. (2012). Postpartum depression and health services expenditures among employed women. *Journal of Occupational and Environmental Medicine, 54*(2), 210–215.

DelRosario, G. A., Chang, A. C., & Lee, E. D. (2013). Postpartum depression: Symptoms, diagnosis, and treatment approaches. *JAAPA, 26*(2), 50–54.

Dennis, C. L. (2004). Influence of depressive symptomatology on maternal health service utilization and general health. *Archives of Women's Mental Health, 7*(3), 183–191.

Dennis, C. L., & Hodnett, E. (2007). Psychosocial and psychological interventions for treating postpartum depression. *Cochrane Database Systemic Reviews*, (4), CD006116.

Diego, M. A., Field, T., & Hernandez-Reif, M. (2005). Prepartum, postpartum and chronic depression effects on neonatal behavior. *Infant Behavior and Development, 28*(2), 155–164.

Downey, G., & Coyne, J. C. (1990). Children of depressed parents: An integrative review. *Psychological Bulletin, 108*(1), 50–76.

Earls, M. F. (2010). Incorporating recognition and management of perinatal and postpartum depression into pediatric practice. *Pediatrics, 126*(5), 1032–1039.

Elgar, F. J., Mills, R. S., McGrath, P. J., Waschbusch, D. A., & Brownridge, D. A. (2007). Maternal and paternal depressive symptoms and child maladjustment: The mediating role of parental behavior. *Journal of Abnormal Child Psychology, 35*(6), 943–955.

Elliott, S. A., Leverton, T. J., Sanjack, M., Turner, H., Cowmeadow, P., et al. (2000). Promoting mental health after childbirth: A controlled trial of primary prevention of postnatal depression. *British Journal of Clinical Psychology, 39*, 223–241.

Ertel, K. A., Rich-Edwards, J. W., & Koenen, K. C. (2011). Maternal depression in the United States: Nationally representative rates and risks. *Journal of Women's Health, 20*(11), 1609–1617.

Farr, S. L., Hayes, D. K., Bitsko, R. H., Bansil, P., & Dietz, P. M. (2011). Depression, diabetes, and chronic disease risk factors among US women of reproductive age. *Preventing Chronic Disease, 8*(6), A119.Retrieved from www.cdc.gov/pcd/issues/2011/nov/10_0269.htm

Field, T. M. (2000). Infants of depressed mothers. In S. L. Johnson (Ed.), *Stress, coping, and depression* (pp. 3–23). Mahwah, NJ: Erlbaum.

Flynn, H. A., Davis, M., Marcus, S. M., Cunningham, R., & Blow, F. C. (2004). Rates of maternal depression in pediatric emergency department and relationship to child service utilization. *General Hospital Psychiatry, 26*(4), 316–322.

Gartlehner, G., Hansen, R. A., Thieda, P., DeVeaugh-Geiss, A. M., Gaynes, B. N., Krebs, E. E., Lohr, K. N. (2007). *Comparative effectiveness of second-generation antidepressants in the pharmacologic treatment of adult depression*. Rockville, MD: Agency for Healthcare Research and Quality.

Gaynes, B. N., Gavin, N., Meltzer-Brody, S., Lohr, K. N., Swinson, T., Gartlehner, G., Miller, W. C. (2005). Perinatal depression: Prevalence, screening accuracy, and screening outcomes. *Evidence Report/Technology Assessment (Summary)*, 119, 1–8.

Gilbody, S., Bower, P., & Whitty, P. (2006). Costs and consequences of enhanced primary care for depression: Systematic review of randomised economic evaluations. *British Journal of Psychiatry, 189*, 297–308.

Goodman, J. H., & Santangelo, G. (2011). Group treatment for postpartum depression: A systematic review. *Archive of Women's Mental Health, 14*(4), 277–293.

Goodman, S. H., & Gotlib, I. H. (1999). Risk for psychopathology in the children of depressed mothers: A developmental model for understanding mechanisms of transmission. *Psychology Review, 106*(3), 458–490.

Grace, S. L., Evindar, A., & Stewart, D. E. (2003). The effect of postpartum depression on child cognitive development and behavior: A review and critical analysis of the literature. *Archive of Women's Mental Health, 6*(4), 263–274.

Hazen, A. L., Connelly, C. D., Kelleher, K. J., Barth, R. P., & Landsverk, J. A. (2006). Female caregivers' experiences with intimate partner violence and behavior problems in children investigated as victims of maltreatment. *Pediatrics, 117*, 99–109.

Kawakami, N., Abdulghani, E. A., Alonso, J., Bromet, E. J., Bruffaerts, R., Caldas-de-Almeida, J. M., Kessler, R. C. (2012). Early-life mental disorders and adult household income in the world mental health surveys. *Biological Psychiatry, 72*(3), 228–237.

Kessler, R. C. (2012). The costs of depression. *Psychiatric Clinics of North America, 35*(1), 1–14.

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Koretz, D., Merikangas, K. R., et al. (2003). The epidemiology of major depressive disorder: Results from the National Comorbidity Survey Replication (NCS-R). *Journal of the American Medical Association, 289*, 3095–3105.

Kessler, R. C., Chiu, W. T., Demler, O., & Walters, E. E. (2005). Prevalence, severity, and comorbidity of 12-month *DSM-IV* disorders in the National Comorbidity Study. *Archives of General Psychiatry, 62*(6), 617–627.

Kessler, R. C., McGonagle, K. A., Zhao, S., Nelson, C. B., Hughes, M., Eshleman, S., & Kendler, K. S. (1994). Lifetime and 12-month prevalence of *DSM-III-R* psychiatric disorders in the United States. Results from the National Comorbidity Survey. *Archives of General Psychiatry, 51*(1), 8–19.

Kornfeld, B. D., Bair-Merritt, M. H., Frosch, E., & Solomon, B. S. (2012). Postpartum depression and intimate partner violence in urban mothers: Co-occurrence and child healthcare utilization. *Journal of Pediatrics, 161*(2), 348–353 e342.

Koverola, C., Papas, M. A., Pitts, S., Murtaugh, C., Black, M. M., & Dubowitz, H. (2005). Longitudinal investigation of the relationship among maternal victimization, depressive symptoms, social support, and children's behavior and development. *Journal of Interpersonal Violence, 20*, 1523–1546.

Lara, M. A., Navarro, C., & Navarrete, L. (2009). Outcome results of a psycho-educational intervention in pregnancy to prevent PPD: A randomized control trial. *Journal of Affective Disorders, 122*(1–2), 109–117.

Leis, J. A., Mendelson, T., Tandon, S. D., & Perry, D. F. (2009). A systematic review of home-based interventions to prevent and treat postpartum depression. *Archive of Women's Mental Health, 12*(1), 3–13.

Lepine, J. P., & Briley, M. (2011). The increasing burden of depression. *Journal of Neuropsychiatric Disease and Treatment, 7*(Suppl 1), 3–7.

Li, D., Liu, L., & Odouli, R. (2009). Presence of depressive symptoms during early pregnancy and the risk of preterm delivery: A prospective cohort study. *Human Reproduction, 24*(1), 146–153.

Lim, J., Wood, B. L., & Miller, B. D. (2008). Maternal depression and parenting in relation to child internalizing symptoms and asthma disease activity. *Journal of Family Psychology, 22*(2), 264–273.

Lovejoy, M. C., Graczyk, P. A., O'Hare, E., & Neuman, G. (2000). Maternal depression and parenting behavior: A meta-analytic review. *Clinical Psychology Review, 20*(5), 561–592.

Mascaro, N., Arnette, N. C., Santana, M. C., & Kaslow, N. J. (2007). Longitudinal relations between employment and depressive symptoms in low-income, suicidal African American women. *Journal of Clinical Psychology, 63*(6), 541–553.

McCrone, P., Knapp, M., Proudfoot, J., Ryden, C., Cavanagh, K., Shapiro, D. A., & Tylee, A. (2004). Cost-effectiveness of computerised cognitive–behavioural therapy for anxiety and depression in primary care: Randomised controlled trial. *The British Journal of Psychiatry, 185*(1), 55–62.

Mezuk, B., Eaton, W. W., Albrecht, S., & Golden, S. H. (2008). Depression and type-2

diabetes over the lifespan: A meta-analysis. *Diabetes Care 31*, 2383–2390.

Moore, G. A., Cohn, J. F., & Campbell, S. B. (2001). Infant affective responses to mother's still face at 6 months differentially predict externalizing and internalizing behaviors at 18 months. *Developmental Psychology, 37*(5), 706–714.

Muñoz, R. F., Cuijpers, P., Smit, F., Barrera, A. Z., & Leykin, Y. (2010). Prevention of major depression. *Annual Review of Clinical Psychology, 6*, 181–212.

Murray, L., & Cooper, P. J. (1997). *Postpartum depression and child development.* New York, NY: Guilford.

National Research Council & Institute of Medicine. (2009). *Depression in parents, parenting, and children: Opportunities to improve identification, treatment, and prevention. Committee on depression, parenting practices, and the healthy development of children.* Board on Children, Youth, and Families. Division of Behavioral and Social Sciences and Education. Washington, DC: The National Academies Press.

Ng, R. C., Hirata, C. K., Yeung, W., Haller, E., & Finley, P. R. (2010). Pharmacologic treatment for postpartum depression: a systematic review. *Pharmacotherapy, 30*(9), 928–941.

O'Hara, M. W., & McCabe, J. E. (2013). Postpartum depression: Current status and future directions. *Annual Review of Clinical Psychology, 9*, 379–407.

Onunaku, N. (2005) *Improving maternal and infant mental health: Focus on maternal depression.* Los Angeles, CA: National Center for Infant and Early Childhood Health Policy at UCLA.

Orr, S. T., James, S. A., & Blackmore Prince, C. (2002). Maternal prenatal depressive symptoms and spontaneous preterm births among African-American women in Baltimore, Maryland. *American Journal of Epidemiology, 156*, 797–802.

Pak, L., & Allen, P. J. (2012). The impact of maternal depression on children with asthma. *Pediatric Nursing, 38*(1), 11–19, 30.

Pan, A., Sun, Q., Okereke, O. I., Rexrode, K. M., & Hu, F. B. (2011). Depression and risk of stroke morbidity and mortality: A meta-analysis and systematic review. *Journal of the American Medical Association, 306*, 1241–1249.

Paulson, J. F., Dauber, S., & Leiferman, J. A. (2006). Individual and combined effects of postpartum depression in mothers and fathers on parenting behavior. *Pediatrics, 118*(2), 659–668.

Payne, K. A., & Myhr, G. (2010). Increasing access to cognitive-behavioural therapy (CBT) for the treatment of mental illness in Canada: A research framework and call for action. *Healthcare Policy, 5*(3), e173.

Pepper, C. M., & Maack, D. J. (2009). Course of depression. In R. E. Ingram (Ed.), *The international encyclopedia of depression*, (pp. 191–193). New York, NY: Springer.

Perry, D. F., Tandon, S. D., Edwards, K., & Mendelson, T. (2014). Preventing perinatal depression through home visiting: The Mothers and Babies Course. *Zero to Three, 34*(5), 45–51.

Petrou, S., Cooper, P., Murray, L., & Davidson, L. L. (2002). Economic costs of post-natal depression in a high-risk British cohort. *British Journal of Psychiatry, 181*, 505–512.

Revicki, D. A., Siddique, J., Frank, L., Chung, J. Y., Green, B. L., Krupnick, J., . . . Miranda, J. (2005). Cost-effectiveness of evidence-based pharmacotherapy or cognitive behavior therapy compared with community referral for major depression in predominantly low-income minority women. *Archive of General Psychiatry, 62*(8), 868–875.

Rexrode, K. M. (2010). Emerging risk factors in women. *Stroke: A Journal of Cerebral Circulation, 41*(10 Suppl), S9–S11.

Rost, K., Smith, J. L., Dickinson, M. (2004). The effect of improving primary care depression management on employee absenteeism and productivity. A randomized trial. *Medical Care, 42*, 1202–1210.

Sanderson, K., Andrews, G., Corry, J., & Lapsley, H. (2003). Reducing the burden of affective disorders: Is evidence-based health care affordable? *Journal of affective disorders, 77*(2), 109–125.

Schoenbaum, M., Unutzer, J., McCaffrey, D., Duan, N., Sherbourne, C., Wells, K.B. (2002). The effects of primary care depression treatment on patients' clinical status and employment. *Health Services Research, 37*(5), 1145–1158.

Scope, A., Leaviss, J., Kaltenhaler, E., Parry, G., Sutcliffe, P., Bradburn, M., & Cantrell, A. (2013). Is group cognitive behaviour therapy for postnatal depression evidence-based practice? A systematic review. *BMC Psychiatry, 13*(1), 321.

Scott, J., Palmer, S., Paykel, E., Teasdale, J., & Hayhurst, H. (2003). Use of cognitive therapy for relapse prevention in chronic depression Cost-effectiveness study. *The British Journal of Psychiatry, 182*(3), 221–227.

Sills, M.R., Shetterly, S., Xu, S., Magid, D., & Kempe, A. (2007). Association between parental depression and children's health care use. *Pediatrics, 119*, e829–e836. doi:10.1542/peds.2006-2399.

Siskind, D., Araya, R., & Kim, J. (2010). Cost-effectiveness of improved primary care treatment of depression in women in Chile. *British Journal of Psychiatry, 197*(4), 291–296.

Surkan, P. J., Radestad, I., Cnattingius, S., Steineck, G., & Dickman, P. W. (2009). Social support after stillbirth for prevention of maternal depression. *Acta Obstetricia Gynecologica Scandinavica, 88*(12), 1358–1364.

Stevenson, M. D., Scope, A., & Sutcliffe, P. A. (2010). The cost-effectiveness of group cognitive behavioral therapy compared with routine primary care for women with postnatal depression in the UK. *Value Health, 13*(5), 580–584.

Taylor, C. A., Guterman, N. B., Lee, S. J., & Rathouz, P. J. (2009). Intimate partner violence, maternal stress, nativity, and risk for maternal maltreatment of young children. *American Journal of Public Health, 99*(1), 175–183.

Tronick, E. (2007). *The neurobehavioral and social-emotional development of infants and children.* New York, NY: WW Norton.

U. S. Census Bureau. (2012). *Profile America facts for features: Mother's Day.* Retrieved from www.census.gov/newsroom/releases/pdf/cb12ff-08_mothersday.pdf

U.S. Department of Health and Human Services, Office of Women's Health. (2009). *Depression during and after pregnancy fact sheet.* Retrieved from www.womenshealth.gov/publications/our-publications/fact-sheet/depression-pregnancy.html

van Steenbergen-Weijenburg, K. M., van der Feltz-Cornelis, C. M., Horn, E. K., van Marwijk, H. W., Beekman, A. T., Rutten, F. F., & Hakkaart-van Roijen, L. (2010). Cost-effectiveness of collaborative care for the treatment of major depressive disorder in primary care. A systematic review. *BMC Health Services Research, 10*, 19.

Vos, T., Corry, J., Haby, M. M., Carter, R., & Andrews, G. (2005). Cost-effectiveness of cognitive-behavioural therapy and drug interventions for major depression. *Australian and New Zealand Journal of Psychiatry, 39*(8), 683–692.

Wang, P. S., Patrick, A., Avorn, J., Azocar, F., Ludman, E., McCulloch, J., et al. (2006). The costs and benefits of enhanced depression care to employers. *Archives of General Psychiatry, 63*(12), 1345–1353.

Webster, J., Pritchard, M. A., Linnane, J. W., Roberts, J. A., Hinson, J. K., & Starrenburg, S. E. (2001). Postnatal depression: Use of health services and satisfaction with health-care providers. *Journal of Quality in Clinical Practice, 21*(4), 144–148.

Weissman, M. M., Pilowsky, D. J., Wickramaratne, P. J., Talati, A., Wisniewski, S. R., Fava, M., & Rush, A. J. (2006). Remissions in maternal depression and child psychopathology: A STAR*D-child report. *JAMA, 295*(12), 1389–1398.

Whitaker, R. C., Orzol, S. M., & Kahn, R. S. (2006). Maternal mental health, substance use, and domestic violence in the year after delivery and subsequent behavior problems in children at age 3 years. *Archive of General Psychiatry, 63*(5), 551–560.

Wuslin, L. R. (2004). Is depression a major risk factor for coronary disease? A systematic review of the epidemiologic evidence. *Harvard Review of Psychiatry, 12*, 79–93.

Zlotnick, C., Miller, I. W., Pearlstein, T., Howard, M., & Sweeney, P. (2006). A preventive intervention for pregnant women on public assistance at risk for postpartum depression. *American Journal of Psychiatry, 163*, 1443–1445

Jargon Buster

Given the multidisciplinary nature of our work with infants, toddlers, and families, we often come across words or acronyms that are new or unfamiliar to us. To enhance your reading experience of this issue of *Zero to Three,* we offer a glossary of selected technical words or terms used by the contributing authors in this issue. Please note that these definitions specifically address how these terms are used by the authors in their articles and are not intended to be formal or authoritative definitions.

Phrase	*What it means*
Cognitive Behavioral Therapy (CBT)	CBT is a form of treatment that focuses on the relationship between thoughts, feelings, and behavior. (Find it in Ammerman, Putnam, Teeters, & Van Ginkel, page 20).
Enhanced Engagement (EE) Model	Enhanced Engagement provides a structured yet flexible framework for conducting assessments and delivering targeted interventions that center on commonly identified life stressors of low income women (Gray & Price, 2012). Enhanced Engagement uses four thematic modules (understanding and coping with depression, adapting to parenting, relationship conflict, grief and loss) that build the client's emotional capacity and promote mental health. (Find it in Price, Gray, & El-Khouri, page 28)
Home Visiting Evidence of Effectiveness (HomVEE)	In 2009, the Department of Health and Human Services launched Home Visiting Evidence of Effectiveness (HomVEE) to review the home visiting research literature and provide an assessment of the evidence of effectiveness for home visiting program models that target families with pregnant women and children from birth to 5 years old. (Find it in McFarlane, Crowne, Burrell, & Duggan, page 53)
Internal Working Models of Attachment	Internal working models of attachment (Bowlby, 1973) guide one's perceptions and behavior in close relationships and how one thinks about providing and receiving emotional support. (Find it in McFarlane et al., page 53)
Interpersonal Psychotherapy (IPT)	IPT was developed for research purposes as a time-limited treatment for depression that has subsequently been refined and tested in multiple clinical trials. (Find it in Beeber et al., page 35)
Project LAUNCH (Linking Actions for Unmet Needs in Children's Health)	Funded by the Substance Abuse and Mental Health Services Administration, Project Launch consists of 5-year grants provide funding to states, tribes, and communities to develop a comprehensive continuum of mental health promotion and prevention services for pregnant women and children from birth to 8 years old. (Find it in Perry, Tandon, Edwards, & Mendelson, page 45)

Bowlby, J. (1973). *Attachment and loss: Vol. 2. Separation.* New York, NY: Basic Books.

Gray, L. A., & Price, S. K. (2012). Partnering for mental health promotion: Implementing evidence based mental health services within a maternal and child home health visiting program. *Clinical Social Work Journal.* doi:10.1007/s10615-012-0426-x

29TH ANNUAL ZERO TO THREE'S NATIONAL TRAINING INSTITUTE

FT. LAUDERDALE, FLORIDA
WEDNESDAY, DECEMBER 10 – FRIDAY, DECEMBER 12
PRE-INSTITUTE DECEMBER 10

CUTTING-EDGE
RESEARCH.
BEST **PRACTICES.**
RELEVANT **POLICY.**

2014 NTI REGISTRATION
NOW OPEN
WWW.ZTTNTICONFERENCE.ORG

WESTIN DIPLOMAT
FT. LAUDERDALE, FL

Join this annual gathering of professionals working in early childhood mental health, early intervention, child care, home visiting, research, and other disciplines who align with a focus on very young children and their behavioral, emotional, and cognitive development and well-being.

Secure *your* place at the NTI by *registering now*.

Questions? Email us at ntiinfo@zerotothree.org or call 1-855-868-1192

UPCOMING ISSUES

July: Stories From the Field–2014
September: New Paradigms for Evaluation and Service Delivery
November: Cognitive Development and Executive Functions

The Editorial Mission of the *Zero To Three* Journal

To provide a forum for thoughtful discussion of important research, practice, professional development, and policy issues in the multidisciplinary infant, toddler, and family field.

ZERO TO THREE's mission is to ensure that all babies and toddlers have a strong start in life.

We provide parents, professionals, and policymakers the knowledge and know-how to nurture early development.

How to Subscribe

- Call (800) 899-4301 between 9am–5pm, Eastern Standard Time
- Visit www.zerotothree.org/estore to place your order online day or night
- E-mail customer service staff at 0to3@presswarehouse.com

ZERO TO THREE®
National Center for Infants, Toddlers, and Families

1255 23rd Street, NW
Suite 350
Washington, DC 20037

Address service requested

Non Profit Org.
US Postage
PAID
Permit No. 425
Southern, MD