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Listening Visits: An Evaluation of the Effectiveness and Acceptability of a Home-based Depression Treatment

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Abstract

Purpose—Maternal depression affects approximately one in five women, is under-treated, and compromises infant development. In the UK, public health nurses provide an empirically supported intervention (*Listening Visits* or LV), to depressed postpartum women. This study evaluates the effectiveness of LV when delivered by US home visitors.

Method—Nineteen women with depressive symptoms received LV. Pre, post, and follow-up assessments evaluated depression status, life satisfaction, and treatment acceptability.

Results—Listening Visits were associated with a statistically and clinically significant reduction in depression, improvement in life satisfaction, and were acceptable to women.

Conclusions—Listening Visits show considerable promise as an effective and acceptable depression treatment.

Introduction

Maternal Depression

Approximately one in five women experience clinically significant depression some time during the first year after giving birth (Gavin et al., 2005), with estimates varying from 15.1% to 30.0%, depending on definition and assessment of depression and studied population. Low-income and ethnic-minority women have an increased risk (Segre, Losch, & O'Hara, 2006; Segre, O'Hara, Arndt, & Stuart, 2007). Symptoms of depression (fatigue, cognitive impairment, loss of interest and motivation) not only diminish women's capacity for sensitive parenting (Lovejoy, Graczyk, O'Hare, & Neuman, 2000), but also place offspring at risk. The negative effects of maternal depression on child development are not universal (Kurtsjens & Wolke, 2001); and it is important to note that some children are resilient to this exposure (Cox & Barton, 2010). Nevertheless, the bulk of empirical evidence indicates that maternal depression has negative effects in numerous domains, including mother infant attachment/interaction (Beck, 1995; Edhborg, Lundh, Seimyr, & Widstrom, 2001; Martins & Gaffan, 2000), the socioemotional and cognitive development of children (Beck, 1998; Murray et al., 1999), behavioral problems (Beck, 1999), and increased risk for externalizing disorders later in life (Goodman & Gotlib, 1999). These negative effects of depression are long-term: e.g., teens who were exposed to maternal depression as infants are themselves more likely to be depressed (Halligan, Herbert,

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Goodyear, & Murray, 2004; Hammen, Brennan, & Keenan-Miller, 2008; Lovejoy et al., 2000). Developing effective, acceptable, and accessible depression treatments for women with children is therefore a priority for the well-being of both mothers and children.

Standard Depression Treatments

Standard depression interventions (e.g., cognitive behavioral therapy and interpersonal psychotherapy) are effective with postpartum women (Chabrol et al., 2002; O'Hara, Stuart, Gorman, & Wenzel, 2000); nevertheless, most depressed mothers do not receive care (Watt, Sword, Krueger, & Sheehan, 2002). For example, one study found that for women screened for depression at their prenatal visit, only 13.8% of those identified as possibly depressed were receiving treatment (Marcus, Flynn, Blow, & Barry, 2003). Moreover, although ethnic-minority and low-income women are at an increased risk for depression, they are even less likely to receive mental health services (Song, Sands, & Wong, 2004).

There are many barriers to treatment: 1) the belief that health professionals are not appropriate for emotional care; 2) patients are uninformed about postpartum depression, making them unaware that they are experiencing this disorder; 3) the belief that a new mother's low mood is a normal experience in the transition to motherhood; and (4) the belief that a depressed mood is not a legitimate illness that warrants treatment (Dennis & Chung-Lee, 2006). Low-income and ethnic-minority women experience additional treatment barriers, including the lack of financial resources to pay for treatment, lack of treatment providers, logistical difficulties, mistrust, fear of treatment, racism, and differences in language and communication (Surgeon General, 1999; Wells et al., 2002).

Adapted Depression Treatments

New models of treatment delivery focusing on women with young children have been developed, which overcome these identification, stigma, economic, and logistical barriers. To engage depressed low-income ethnic-minority women in cognitive behavioral therapy (CBT), researchers addressed logistical and trust barriers with extensive outreach measures, such as making frequent phone contact to provide encouragement, as well as providing child care and transportation (Miranda et al., 2003). For those women who eventually participated in treatment, CBT effectively reduced their symptoms. However, the outreach efforts required were considerable: the clinicians spoke with women an average of ten times before the woman agreed to attend a therapy session. On the basis of this difficulty, the researchers speculated that “engaging women through trusted providers could prove easier” (Miranda et al., 2003 p.64).

The most recent effort to engage difficult-to-reach, at-risk women in psychotherapy has focused on modifying interpersonal psychotherapy (IPT; Grote, Swartz, & Zuckoff, 2008). The modified version (enhanced IPT-brief) has an 8-session format, includes a motivational interviewing session (which uses ethnographic interviewing to address a woman's individual concerns about psychotherapy) and provides daycare, transportation, and case management by the IPT therapist (Grote et al., 2008). Case management focuses on helping women with economic and social needs, such as finding a job, housing, or other necessary resources. The results of a randomized controlled trial showed significant reductions in depressive symptoms and a concomitant increase in social adjustment among women who received enhanced IPT-brief compared to those who received enhanced usual care (e.g., provision of resources such as bus passes and daycare to remove the logistical barriers to accessing care) (Grote et al., 2009).

This recent treatment development research has focused on modifying the standard depression treatments delivered by mental health professionals and these adapted treatments

have indeed successfully engaged low-income women. Nonetheless, it is not clear whether these efforts can be sustained outside the context of a financially supported research study. Treatment provided by a trusted nursing or home visiting professional (Miranda et al., 2003) may enhance its accessibility and acceptability to this population. Such a model of mental health care is already practiced in the UK.

Nurse-delivered Model of Postpartum Depression Care in the UK

Depression screening—In the UK, as part of universal child-health surveillance, all postpartum women are visited by health visitors—professionals with three years of university-level generalist nursing education and one year of specialist training, who have roughly the equivalent of a US bachelor's degree (Cowley, Caan, Dowling, & Weir, 2007). As part of this care, health visitors routinely screen all new mothers for depression and provide home-based treatment to any new mother identified as mildly to moderately depressed. Women identified as possibly depressed are either referred to specialist services or offered Listening Visits (LV), a depression intervention provided by the health visitor.

Depression treatment—Listening Visits protocols were developed for health visitors with little or no prior mental health training (Holden, Sagovsky, & Cox, 1989). The core techniques of this two-part non-directive counseling intervention are the exploration of a client's problems through reflective listening and collaborative problem solving. Reflective listening is a counseling technique providers use to help clients work through a difficult situation. In *reflective listening* the listener attends to all aspects of the client's verbal and nonverbal messages and reflects these messages back to the client. In reflecting back the client's message, the listener offers a link between the experience and the associated affect, emphasizing that the listener is genuinely interested in understanding the client's situation, is working in partnership with the client, and is not assuming the expert role.

The goal of *collaborative problem solving* is to help clients handle their difficulties and make changes that agree with their values. Treatment providers work with clients to generate a comprehensive listing of all their problems and then select one particular problem as a focus. The client is encouraged to brainstorm a list of solutions and choose a viable one, which she and the treatment provider critically evaluate in terms of the likely positive or negative outcomes. If still acceptable, a plan to implement that solution is collaboratively developed.

Listening Visits Empirical evidence and clinical practice—The first evaluation of LV found that 18 of 26 (69%) depressed women in the LV group recovered from depression compared to 9 of the 24 (38%) women in a control group (Holden et al., 1989). These statistically significant differences were replicated in three subsequent randomized controlled trials of LV (Cooper, Murray, Wilson, & Romaniuk, 2003; Morrell et al., 2009; Wickberg & Hwang, 1996). In the UK, LV are now recommended evidence-based practice for mild to moderate postpartum depression (National Institute for Health and Clinical Excellence, 2007). Health visitors offer depressed women four LV sessions in the home, each visit lasting approximately one hour. As a non-directive intervention, the specific course of the visits is based on the woman's need. Ideally, the first sessions focus on exploring the woman's problem while later sessions focus on collaborative problem solving and concluding the treatment.

Listening Visits in the US

In the US, specialized home visiting programs such as Healthy Start (Brand, Walker, Hargreaves, & Rosenbach, 2008) and Nurse Family Partnership (Olds et al., 2004) have been established to prevent poor health outcomes for children of low-income families. Like

the health visitor in the UK, the US home visitor is accepted (they have already established a rapport with clients) and accessible (they provide in-home services). These two features, acceptability and accessibility, place US home visitors in the ideal position to provide a depression treatment like LV. Of course, the availability of an evidence-based practice in one country does not guarantee success in a vastly different health care system.

The purpose of this study was to conduct a preliminary assessment of whether LV might also work in the US. This evaluation was conducted in a Healthy Start program located in a medium-sized Midwestern city. Healthy Start is a home-visiting program that focuses on reducing infant morbidity and mortality by providing case management services (Brand et al., 2008). Healthy Start clients include low-income women who are pregnant or have children less than two years of age and who live within areas (e.g., zip codes) with high infant mortality rates. Although screening for depression had been implemented in the Healthy Start program, an informal audit of the database by the Healthy Start director indicated that many women identified as depressed were not being treated. The director, in collaboration with the first (*author initials*) and third (*author initials*) authors, identified LV as a means to address this treatment gap because 1) home visitors are ideally positioned to provide in-home depression treatment to low-income women given their established trusting relationship and relative accessibility, and 2) LV can be effectively delivered by professionals with little or no mental health treatment experience.

In the current study our working hypothesis was that for low-income, ethnic-minority women with depressive symptoms, LV would be an effective treatment as evidenced by decreased depression and improved life satisfaction. We also predicted that LV would be an acceptable treatment for this population of women.

Materials and Method

Participants

Twenty Healthy Start clients met the study enrollment criteria and provided their informed consent. A power analysis indicated that a group of 20 subjects could reveal moderate differences between pre- and post-LV scores for depression. Immediately after enrollment, but before the LV started, one woman withdrew from the Healthy Start program and opted to receive counseling instead of LV, leaving a total of 19 participants.

The inclusion criterion for this study was an elevated score (≥ 12) on the Edinburgh Postnatal Depression Scale (EPDS; Cox & Holden, 2003). This criterion was consistent with clinical practice in Healthy Start, where home visitors offered mental health services on the basis of EPDS scores. Exclusion criteria were also consistent with clinical practice: home visitors did not offer LV to women with elevated EPDS scores if they were receiving other counseling services, reported a diagnosis of current or past manic episodes, current alcohol or substance abuse problems, or were actively psychotic or suicidal. Two additional exclusion criteria were study specific: being English or Spanish speaking and 14 years of age or older.

From October 2007 to July 2009, 1005 women were enrolled in the Healthy Start program; and home visitor screening determined that 394 (39.2%) had an elevated EPDS score. Of these 394 women, 74 (18.8%) accepted LV, 112 (28.4%) chose another treatment option, and the remaining women met exclusion criteria or declined services (n=208; 52.8%). Among the 74 women who accepted LV, some could not speak English or Spanish and others preferred to receive LV but not to participate in the research, resulting in a final sample of 19 women.

Table 1 shows the sociodemographic profile of the 19 participants, as well as that of the general population of Healthy Start clients. Almost two-thirds of the study participants were of Hispanic ethnicity and the majority of study participants had low-incomes. There was one significant difference between the open trial sample and the overall population of Healthy Start clients: the Healthy Start clients were, on average, four years older than the women in our trial. With regard to current and past mental health services, six women reported they were currently using psychotropic medication. Seven women reported they had taken psychotropic medication in the past; and seven indicated they received counseling in the past, reporting an average of 1.71 visits to a mental health professional.

Procedures

Human subject's approval—All procedures for this study were approved by the University's Institutional Review Board.

Home visitors and LV training—Eight Healthy Start home-visiting staff provided LV. All were female and held a bachelor's level degree in various social science disciplines or nursing. Home visitors, who were 30.5 years old on average, reported an average of 19 months of home-visiting experience (range = 1 to 48 months; sd = 19.75). Because some home visitors did not complete a demographics questionnaire, this information was available for only five of the eight home visitors.

Before attending LV training, each home visitor attended perinatal depression screening workshops; these included information on the definition, prevalence, and negative effects of perinatal depression, as well as screening and approaches to treatment. After completion of the screening workshops, all Healthy Start home visitors attended the LV workshop. The initial training was delivered by a British health visitor who specialized in LV training. Subsequently, new personnel were trained by the first author (*author initials*), who developed our LV training curriculum in consultation with the British health visitor LV specialist. This training workshop begins by describing the LV intervention, including LV practices in the UK and a review of relevant empirical studies. The second part of the workshop teaches the component LV skills (introducing LV to a client, active reflective listening, and problem solving) through lectures, exercises, and video-demonstrations. The last part of the training describes agency-specific LV procedures, including supervision, paperwork, and issues of caseload adjustment.

Screening and recruitment—As part of usual Healthy Start clinical services, home visitors regularly screen their clients for depression using the EPDS. Healthy Start clients scoring 12 or greater on the EPDS, and who were not suicidal as assessed by item 10, were offered referrals for a range of treatment options, such as psychotherapy and medication, as well as LV provided by the home visitor. Healthy Start clients interested in receiving LV were told about the research study, and those interested completed a form allowing the research team to contact them. The research team interviewer arranged an in-home visit to describe the study and, if appropriate, completed the informed consent document. Recruitment for the open trial occurred from October 2007 through February 2009.

Treatment—Home visitors could provide up to six sessions of LV, each visit lasting approximately one hour. Participants concurrently received regular Healthy Start case management services. Listening Visits were either scheduled separately from case management home visits or as an extended case management visit with a distinct time period devoted to LV. For participants who only spoke Spanish, LV were provided by bilingual home visitors.

Study interviews—Participants were interviewed three times: pre-LV (0 months), post-LV (2 months post-enrollment), and at follow-up (5 months after enrollment or 3 months after the last LV). At one month, approximately mid-LV, participants completed the short form of the Postpartum Depression Screening Scale (PDSS; Beck & Gable, 2002), to monitor for marked clinical deterioration and suicidality. If their PDSS score was more than one standard deviation above their pre-LV interview score, they would have been referred for professional mental health treatment. None of the study participants evidenced significant clinical deterioration. Participants who only spoke Spanish were assessed by a bilingual interviewer (*author initials*). Participants were interviewed either in their home or over the phone, depending on the participant's preference; participants were compensated for each interview.

Measures

Demographics—A 29-item questionnaire developed for this study assessed the following demographic variables: age, ethnicity, race, marital status, education level, employment status, income, number of children, and past and current mental health treatment.

Depression—Depression status was assessed using two self-report scales as well as two clinician-administered interviews. The first self-report scale, the EPDS, is a 10-item instrument developed to assess depressive symptoms in postpartum women; the EPDS has also been validated with pregnant women and women with toddlers (Cox & Holden, 2003). A cutoff score of 12 or greater has a sensitivity and specificity of 0.86 and 0.78, respectively (Cox & Holden, 2003). In the current study, the scale had an alpha reliability of 0.82 at the pre-LV assessment, with similar internal consistency at the subsequent assessments.

The second scale, the PDSS, provided another assessment of self-reported depressive symptoms. The PDSS is a 35-item self-report depression symptom assessment that uses a 5-point Likert-type response format; the short form is comprised of the first seven items. Psychometric studies provide empirical evidence for its convergent and concurrent validity as well as its acceptable specificity and sensitivity (Beck & Gable, 2002). In the current study, the alpha reliability of the PDSS ranged from .62 to .84 at the different assessment time points (pre-LV, post-LV and follow-up).

Clinician-rated depression severity was assessed with the 17-item version of the *Hamilton Rating Scale for Depression* (HRSD; Hamilton, 1967). In previous studies of postpartum women, the HRSD proved to be sensitive to changes in depression level in women receiving treatment (O'Hara et al., 2000; Thompson, Harris, Lazarus, & Richards, 1998) and is a reliable and valid indicator of depression severity in postpartum women (O'Hara et al., 2000; Ross, Gilbert Evans, Sellers, & Romach, 2003).

Depression diagnostic status was established using the *Structured Clinical Interview for DSM-IV-TR*, Nonpatient Edition (SCID-I/NP; First, Spitzer, Gibbon, & Williams, 2002; Spitzer, Williams, Gibbon, & First, 1992). The SCID-I/NP is a clinician-administered, semi-structured interview for use in making Axis I DSM-IV-TR diagnoses. The current major depression module was administered to assess major depression diagnostic status. The current and past manic episode, current alcohol and substance abuse and psychotic screening modules were administered to rule out women who had those diagnoses.

Life satisfaction—Life satisfaction was assessed using the 16-item self-report “General Activities” subscale of the Quality of Life, Enjoyment and Satisfaction Questionnaire (Q-LES-Q; Endicott, Nee, Harrison, & Blumenthal, 1993). This 16-item scale utilizes a 5-point Likert-type scale to assess satisfaction in several domains including work, home, and relationships as well as a global item assessing overall life satisfaction. A total score is

reported as a percentage of the maximum possible score of 70. The Q-LES-Q has both high internal consistency and strong external validity (Endicott et al., 1993). In the current sample, the scale had an alpha reliability of 0.90 at the pre-LV interview, with similar internal consistency at the post-LV and follow-up interviews.

Treatment acceptability—Two measures were used to assess women's satisfaction with treatment. The *Client Satisfaction Questionnaire* (CSQ) is an 8-item instrument which utilizes a 4-point Likert scale to assess the following: the degree to which the intervention met their expectations, their satisfaction with the help received, their assessment of the effectiveness of the help, and their willingness to receive it again or recommend it to a friend (Larsen, Attkisson, Hargreaves, & Nguyen, 1979). The CSQ has a high degree of internal consistency ($\alpha = 0.93$) and correlates well with other estimates of satisfaction (Larsen et al., 1979). The wording of this instrument was modified to specify the treatment providers associated with LV. The scale's coefficient alpha in this sample was 0.88.

Acceptability of LV was also assessed in the *View of LV Interview* (developed for this study), which consisted of scaled and open-ended items. A scale of “change” or “stay the same” was used to assess whether women would change any aspect of LV including who provided LV as well as the location, number, or length of sessions. A four-point scale of “excellent,” “good,” “fair,” and “poor,” was used to rate home visitors' effectiveness. One global item assessed overall perception of the utility of the intervention (“Overall how helpful was the treatment for you?”) and was rated on a scale ranging from 0 (“not helpful”) to 6 (“very helpful”). Open-ended questions assessed women's experience with LV.

Data Analyses

Statistical analyses were performed using Statistical Analysis System (SAS) software for the personal computer, version 9.2. Descriptive statistics revealed the demographic characteristics of participants. Random regression using PROC MIXED was used to compare scores on the EPDS, HRSD, PDSS, and Q-LES-Q across time, which also allowed us to model missing data for two subjects at time 3 (and one additional subject who was only missing the EPDS at time 3). Paired-samples t-tests evaluated the change in scores from pre- to post-LV and follow-up in EPDS, HRSD, PDSS, and Q-LES-Q. To examine the magnitude of the reduction in depressive symptom scores, the mean differences (e.g., Time 2 – Time1), adjusted for the baseline standard deviation and expressed as Cohen's *d*, (Cohen, 1992, 1988) were computed on EPDS, HRSD, and PDSS scores. In line with Cohen (1992), effect sizes were defined as small (0.20–0.49), moderate (0.50–0.79), and large (≥ 0.80).

Analyses examining whether there was a clinically significant change in depressive symptom scores utilized the Reliable Change Index (RCI: Jacobson & Truax, 1991) and cutoff score analysis as described by Matthey (Matthey, 2004). For the EPDS, a four point or greater change is required to be 95% confidant that the score difference does not reflect measurement error, i.e., reliable change criterion =4.0. If the change in the EPDS score from pre- to post-LV was less than 4 points, then the participant was classified as “no change.” Additionally, using a cutoff EPDS score of 12 or less, those who had a four point difference in their pre- to post-LV EPDS score were considered “recovered if the post-LV score was < 12, “improved without recovery” if the post-LV EPDS score was ≥ 12, or “clinically deteriorated” if the post-LV score was higher than the pre-LV score and ≥ 12.

Results

Depression

During the 5-month period between the pre-and post-LV interviews, the mean scores on every depression measure decreased. The random regression model revealed statistically significant changes in scores across time on the EPDS ($F = 18.86$, df = 2, 18, $p < 0.0001$), PDSS ($F = 4.60$, df = 2, 18, $p = 0.03$), and HRSD ($F = 7.93$, df = 2, 18, $p = 0.004$). Paired-samples t-tests indicated statistically significant decreases in mean EPDS, PDSS, and HRSD scores from pre- to post-LV and follow-up (Table 2). Scores did not change from post-LV to follow-up, suggesting gains were sustained during the follow-up time period (Table 2). Mean-level comparisons of EPDS, HRSD, and PDSS scores between pre- and post-LV and follow-up resulted in large effect sizes (ranging from −0.91 to −1.78), showing depression scores decreased by nearly two standard deviations for the EPDS (Table 2). With regard to recovery, 4/19 (21.1% did not show evidence of reliable change in EPDS scores (i.e. ≥ 4 points) and were classified as “no change.” Almost two thirds (12/19 or 63.2%) were considered “recovered” and an additional two women (10.5%) were classified as “improved without recovery.” Of the 19 participants only 1 (5.3%) was classified as “clinically deteriorated” after LV. These results thus suggest a large and sustainable change in depression scores from pre- to post-LV as well as clinically significant change for approximately two-thirds of the women.

The number of women with a diagnosis of Major Depressive Episode (MDE) at the pre-LV interview was seven (36.8%). At the post-LV interview, all of these women no longer met criteria for MDE but two new cases of MDE were diagnosed. At follow-up, only one of the two new-onset cases still met the criteria for an MDE diagnosis. McNemar's test was used to examine the changes in the number of MDE diagnoses from pre- to post-LV and at follow-up. Although the total number of women diagnosed with MDE decreased from pre- to post-LV (from 7 to 2 cases), this reduction was not statistically significant at post-LV (exact $p = 0.180$). However, the decrease in the number of cases from pre-LV to follow-up (from 7 cases to 1 case) approached significance (exact $p = 0.070$).

Comparisons between the group of women who were on medication (n=6) and those that were not on medication (n=13) resulted in no significant differences between groups on any of the four depression outcomes; all p values were greater than 0.35.

Life Satisfaction

At the pre-LV interview the mean percentage score on the Q-LES-Q was 44%. Mean percentage scores at post-LV and follow-up were 60% and 58%, respectively. The random regression model revealed that the change in Q-LES-Q score over time was statistically significant ($F = 5.85$, df = 2, 18, $p = 0.01$) in the direction indicating improvement. Paired-samples t-tests indicated a significant increase in Q-LES-Q scores from pre- to post-LV ($t = −3.02$, df= 18, $p < 0.01$) as well as from pre-LV to follow-up ($t = −3.22$, df=16, $p < 0.01$).

Treatment Acceptability

The scale mean for the CSQ was 30.1 (sd = 2.6) and the score distribution of this measure was negatively skewed, indicating that the women were highly satisfied with LV. These positive results on the CSQ are comparable to, and typical of psychotherapy studies (Swartz et al., 2004; Swartz et al., 2006).

Participants' responses on the *View of LV Interview* revealed high levels of satisfaction. With regard to recommended changes, all of the women said they would not change anything about where LV took place or by whom it was delivered. Eight women (42%) indicated they

would change either the number or length of LV sessions, each indicating they would prefer more and/or longer sessions. In terms of home visitors' effectiveness in delivering the intervention, the women unanimously felt their home visitor was either “excellent” or “good” at listening to problems and responding in a caring way (Table 3). The mean score on the global item was 5.7, indicating the majority of the women found LV to be “very helpful.” A review of the participants' responses to the question “Can you tell me how LV helped you?” revealed three general themes: “learned value of verbally expressing feelings,” “found significance of nonjudgmental listener,” and “enhanced problem-solving skills.” Exemplars of each theme are provided in Table 4.

Discussion and Conclusion

The results of this open trial indicate that LV, as delivered by US home visitors, show considerable promise as an effective, acceptable, and accessible treatment option for low-income and ethnic-minority women with depressive symptoms. As predicted, women treated with LV showed statistically and clinically significant improvements in depression severity. This improvement was sustained through to the three-month post-LV follow-up interview. Additionally, of the seven women (36.8%) meeting DSM-IV-TR criteria for major depression prior to LV, none met criteria for MDE at the post-LV assessment. Of the two new cases of depression at the post-LV assessment, only one sustained this depression level at the follow-up. Thus, LV were an effective treatment for 18 of the 19 women (94.7%). Only one woman needed additional treatment after receiving LV.

Listening Visits were also associated with significant improvement in life satisfaction. Specifically, at the post-LV and follow-up interviews, women rated their quality of life using the Q-LES-Q. Several domains improved significantly, including how well they were getting along at work, at home, and with other people. Additionally their satisfaction with life in general, as assessed by the global Q-LES-Q item, improved significantly.

Most importantly, the results indicate that LV are an acceptable treatment option for low-income and ethnic-minority women who typically do not receive depression treatment from mental health professionals. The utilization data indicate that 394 women had elevated EPDS scores. Of these, 28.4% (112) elected to receive treatment from a mental health professional. Not all of the remaining 282 (394–112) women were suitable for LV (some were receiving treatment, others declined treatment completely, and others had diagnosis of bipolar disorder or schizophrenia). Nevertheless, for 74 of the 394 women identified (18.8%), LV provided one useful treatment option. Moreover, of those who received LV, the average total score on the CSQ was high, as were the ratings of individual components of LV. Notably, in this study, the average global satisfaction rating ($\bar{x}$ =30.1) was even higher than the average global satisfaction rating ($\bar{x}$ =27.1) that was reported in a large sample of treatment recipients (Nguyen, Attkisson, & Stegner, 1983), although it is typical to find such negatively skewed results in studies of psychotherapy treatment outcomes. Similarly, on the *View of LV Interview*, participants gave uniformly high ratings to the helpfulness of LV, as well as to the individual treatment components, including the treatment provider, place of treatment, and duration. The only recommended change was to provide either longer and/or more sessions.

Our study had some methodological limitations: a small sample, the lack of a comparison group, and, because all women received LV, diagnostic assessments were not blind to condition. The small self-selected convenience sample limits the generalizability of the results. Additionally, without a control group, the improvement in depression and life satisfaction cannot be definitively attributed to LV. For example, the home-visits alone may account for this improvement; therefore, it is not yet clear whether the implementation of

this new practice is warranted. The next step in establishing empirical evidence is to conduct a larger randomized controlled trial.

Balancing the study's limitations were several strengths that increased its external validity and importance. The study subjects represented a difficult to reach group of women. Comprehensive depression and quality of life data were collected on nearly every subject, which is not often the case in similar studies with this population. Participants were compliant with the intervention and responded to their case manager treatment provider in the predicted manner – accepting and validating the treatment. This brief intervention demonstrated clinically significant effects. Finally, it was seamlessly implemented into the case management practice of the providers with no additional clinical resources required.

In conclusion, LV can be effectively delivered by home visitors, and appear to be acceptable to low-income and ethnic-minority women at risk for depression; thus, this alternative intervention has considerable potential to overcome the barriers inherent to depression treatments delivered by mental health professionals. While not replacing depression treatment by mental health professionals, LV are a tool that can be used by home visitors to stem the gap in treatment services for women who might not otherwise receive help.

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Table 1

Demographic Characteristics of Open Trial and Healthy Start Participants

Variable	Open Trial (*n* = 19)	Healthy Start (*n* = 986)	Comparison
	Mean (sd)	*Mean*[a]	*One-sample t-test*
Age (years)	27.6 (6.1)	31.60	*p* = .01 (t=2.86, df=18)
No. of children	2.5 (1.4)	2.06	*p* = .19 (t=1.37, df=18)
	N (%)	**N (%)**	**Fisher's exact test**
Race			*p* = 0.81
White	12 (63.2)	622 (63.1)[b]	
Minority	7 (36.8)	306 (31.0)	
Ethnicity			*p* = 0.25
Hispanic/Latino	12 (63.2)	498 (50.5)	
Not Hispanic/Latino	7 (36.8)	488 (49.5)	
Married	6 (31.6)	384 (38.9)	*p* = 0.64
Employed	10 (52.6)	291 (29.5)[c]	*p* = 0.34
Income[d]			*p* = 0.18
< $10,000	9 (47.4)	435 (43.9)	
> $10,000	5 (26.3)	556 (56.1)	
Education			*p* = 0.35
< High School diploma	9 (47.4)	581 (58.9)	
> High School diploma	10 (52.6)	405 (41.1)	

[a] Data on Healthy Start clients was provided in aggregate, as specified in the agreement between the University of Iowa and Visiting Nurse Services; therefore standard deviation values are not available.

[b] 58 participants selected “Other” on this item

[c] 255 participants selected “Other” on this item

[d] Because the 19 study participants were included in the aggregate Healthy Start data, it was necessary to remove their values from the aggregate total in order to conduct comparisons. Five of the study participants did not report income level and we were therefore uncertain from which category to remove their values. Thus, we conducted all possible comparisons, removing from zero to five women from each of the two income categories, obtaining *p*-values from .01 to .82 across the six comparisons. If four or five of the participants without reported values were to fall in the <$ 10,000 category, the difference between study participants and Healthy Start clients' income level would be significant.

Table 2

Depression Outcomes

Measure	Pre-LV M (sd)	Post-LV M (sd)	Pre/Post-LV effect size	Follow-up M (sd)	Pre-LV/Follow-up effect size
EPDS	14.84 (4.37)	8.00 (5.28)[a]	−1.57	7.06 (3.97)[a]	−1.78
PDSS	21.18 (5.49)	16.16 (5.76)[b]	−0.91	15.13 (6.39)[b]	−1.10
HRSD	15.42 (5.74)	9.32 (5.89)[b]	−1.06	8.65 (7.20)[b]	−1.18

Note. *N* = 16–19 due to missing data.

EPDS = Edinburgh Postnatal Depression Scale; PDSS = Postpartum Depression Screening Scale; HRSD = Hamilton Rating Scale for Depression

[a] $p < 0.01$ based on t-test with df = 18 at post-LV and df = 15 at follow-up

[b] $p < 0.01$ based on t-test with df = 18 at post-LV and df = 16 at follow-up

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Table 3

Participants' Ratings of Home visitor Effectiveness

Item	Excellent	Good	Fair	Poor
How did your case manager do at…?	**N (%)**	**N (%)**	**N (%)**	**N (%)**
Really listening to your problems	17 (89.5)	2 (10.5)	0 (0)	0 (0)
Responding in a caring way	17 (89.5)	2 (10.5)	0 (0)	0 (0)
Providing help for your mood	18 (94.7)	1 (5.3)	0 (0)	0 (0)
Looking for new answers to your problems	17 (89.5)	2 (10.53)	0 (0)	0 (0)
Making you feel like you are able to deal with your problems	17 (89.5)	2 (10.5)	0 (0)	0 (0)
Helping you feel comfortable discussing your problems	17 (89.5)	2 (10.5)	0 (0)	0 (0)

Table 4

Exemplars of Helpful Elements of Listening Visits

"Can you tell me how Listening Visits helped you?"

Learned value of verbally expressing feelings

- It is helpful to get things off my chest because when you keep stuff in it will bother you when you are doing other things…when you talk about it, it helps them go away.
- It [LV] relieved me. I would not think so much about [my problems] after LV.
- Sometimes you can't tell everybody stuff, but sometimes you need to tell somebody.
- More than anything, she listened to me. Gave me power to talk and ask question.

Significance of non-judgmental listener

- I saw her as a friend, but a different kind. Everything was confidential so I could tell her everything from the smallest to the biggest things.
- For me, the visits really helped. It's good to have someone to talk to who you don't know.

Enhanced problem-solving skills

- It [LV] helped me to find good solutions to my problems.
- We did a plan. Problem-solving was fun, helpful, and relaxing.
- Helped me to think about how to take care of my kids.
- I don't have many friends to talk to. She helped me to think about things and come to solutions. It was the best for me.