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The Positive Effect of a Group Intervention to Reduce Postpartum Depression on Breastfeeding Outcomes in Low-Income Women

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Abstract

This study examined, as a secondary analysis, whether a group interpersonal psychotherapy (IPT) intervention focused on preventing postpartum depression by strengthening social support and building interpersonal skills during the transition to motherhood positively affected breastfeeding outcomes among low-income women. The intervention, Reach Out, Stand strong, Essentials for new mothers (ROSE), taught participants the importance of self-care and assertive help seeking to be better able to sustain breastfeeding practices. Ninety-nine pregnant women were randomized to ROSE plus standard care or to standard care alone. Though women in both conditions had similar breastfeeding initiation rates, women in ROSE had longer breastfeeding duration (median days breastfed: 54 vs. 21). Results suggest ROSE may positively affect breastfeeding.

Search Terms

breastfeeding; low-income women; social support; postpartum depression; intervention

Introduction

Although there are unequivocal findings supporting the benefits of breastfeeding, rates of breastfeeding in the U.S. remain low, with only 43% of women breastfeeding at six months postpartum (Centers for Disease Control and Prevention [CDC], 2010). Breastfeeding benefits include: reduced infant mortality, better cognitive, educational and behavioral outcomes for the children, decreased risk of breast and ovarian cancer for the mothers, and

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reduced stress for both children and mothers (Belfort et al., 2013; Heikkilä, Sacker, Kelly, Renfrew, & Quigley, 2011; Kendall-Tackett, 2007). Furthermore, breastfeeding can help increase pregnancy spacing, which may be particularly important for low-income mothers (Gartner et al., 2005; Labbok, 2001).

Both initiation rates and duration of breastfeeding are significantly lower in low-income, African-American, young, or unmarried mothers than in the general population (Alexander, O’Riordan, & Furman, 2010; Ryan, Wenjun, & Acosta, 2002). While previous breastfeeding programs that provide education (e.g., information on breastfeeding) or support (e.g., encouragement and guidance) in the general population have seen positive effects on breastfeeding outcomes (Guise et al., 2003; Renfrew, McCormick, Wade, Quinn, & Dowswell, 2012; Sikorski, Renfrew, Pindoria, & Wade, 2005), interventions for low-income mothers have had limited success in increasing breastfeeding initiation and even less success in increasing breastfeeding duration (Ibanez et al., 2012; Petrova, Ayers, Stechna, Gerling, & Mehta, 2009; Pugh et al., 2010). Given the need for low-cost, disseminable ways to address low rates of breastfeeding in this population, we decided to assess the value of a psychoeducational group approach to this public health concern. Since the vast majority of group interventions conducted in clinical practice are psychoeducational and are provided by non-PhD, non-M.D., and sometimes paraprofessional providers, as in this study, adopting such a group format makes this approach a cost-efficient disseminable way to address this pressing health need.

It is important to note that psychoeducational approaches and group interventions have been successfully used in addressing a variety of public health problems dating back to the pioneering work of Joseph Henry Pratt with tubercular patients (Pratt, 1917). Furthermore, psychoeducation is a primary component embedded in CBT approaches that have proven successful in treating psychological problems such as simple phobias and depression (Beck, 2005). In addition, groups have been used in dealing with a variety of public health problems by encouraging compliance through peer and social support without using a psychodynamic approach, e.g., AA and Weight Watchers. Group psychoeducational interventions have been successfully applied in treating bipolar disorder (Colom et al., 2009), fear of childbirth (Saisto, Toivanen, Salmela-Aro, & Halmesmäki, 2006), and recovery from mass trauma (Klein & Phillips, 2008).

The present study, a secondary analysis, examined whether a group psychoeducational intervention called the ROSE (Reach Out, Stand strong, Essentials for new mothers) Program would positively affect breastfeeding initiation and/or duration among postpartum women on public assistance. The ROSE Program, a psychoeducational group program based on Interpersonal Psychotherapy (IPT) (Weissman, 1994), was developed to prevent postpartum depression (PPD) in low-income women (Zlotnick, Johnson, Miller, Pearlstein, & Howard, 2001). The program focuses on ways to strengthen existing social support from close friends and family, strategies for the mother herself to build and utilize social support during the transition to motherhood, and skills for making assertive requests for practical help, particularly for help around the baby. It did not directly mention breastfeeding or teach breastfeeding skills, only interpersonal skills designed to help the mother care for herself and her child in the vulnerable postpartum period. The group setting reduces feelings of

isolation and allows for observation, learning, modeling, and sharing of skills among group members. For example, participants would do role plays with one another and provide feedback to one another on their communication styles. Since low-income mothers often experience inadequate social support (Dominguez & Watkins, 2003; Green & Rodgers, 2001; Henly, Danziger, & Offer, 2005), and greater social support is strongly related to improved breastfeeding outcomes (Dennis, 2002; Thulier & Mercer, 2009), it would make sense for ROSE to influence breastfeeding outcomes in low-income mothers.

The parent study found that ROSE significantly reduced the likelihood of PPD (Zlotnick et al., 2001; Zlotnick et al., 2006). In the present study, the investigators hypothesized that women who participated in ROSE in addition to standard care would have higher initiation rates and longer durations of breastfeeding within the first three months postpartum compared to those who received only standard care.

Methods

Pregnant women on public assistance between 20–35 weeks gestation were recruited for the parent study from a prenatal clinic at an inner-city hospital in the Northeast. Women were assessed for risk for PPD using a validated 17-item index (Cooper, Murray, Hooper, and West (1996)) and were eligible for the study if they had a score of 27 or higher, an empirically derived cutoff for high-risk status; women were excluded if they were receiving mental health treatment or if they met criteria for a current major depressive disorder (as the primary outcome of the parent study was PPD) or substance use disorder (see Zlotnick et al., 2006). Urn randomization was performed to stratify the sample (n=99) to ensure comparability for previous episodes of depression. Fifty-three women were randomized to ROSE plus standard antenatal care and forty-six to standard antenatal care alone. Standard antenatal care offered by the prenatal clinic included no systematic assessment of depression and no groups for mental health issues, but offered optional classes on breastfeeding, infant safety, and parenting. Three month postpartum follow-up assessment rates for both conditions were 87%.

The ROSE Program consisted of four 60-minute group sessions over a 4-week period and a 50-minute individual booster session after delivery. Groups of 3–5 women were conducted at the prenatal clinic; booster sessions were completed either at the clinic or at participants' homes. There was no monetary incentive for completing the groups or the booster.

The first of the four group sessions provided an interpersonal rationale for the program, a review of the course outline, ground rules for the group, and the signs and symptoms of “baby blues” and PPD. Women shared with the group stories of their own or others' experience of the postpartum period. Session two addressed stress management skills, managing role transitions into motherhood, and the development of a support system. Women exchanged ideas about how to reduce stress and how to build and use a support system. Session three identified types of interpersonal conflicts common around childbirth and techniques for resolving them. Women role-played different situations in their lives in group and provided feedback to each other. Session four continued to teach skills for resolving interpersonal conflicts and also focused on setting goals and reviewing the main

themes of the intervention. Each session, women would share their successes/skills in resolving interpersonal conflicts. Homework was given at the end of each session. Women reported how well they accomplished their homework and provided feedback to others. The “booster” session individually administered soon after delivery reviewed the content of the previous sessions and addressed how current and anticipated mood changes were associated with interpersonal difficulties in the IPT target areas.

Group leaders were two nurses who received two hours of training and supervision in the delivery of the intervention. Training consisted of a review of information on PPD, the conceptualization of the intervention, how to conduct the sessions with a focus on specific IPT therapeutic strategies, how to conduct the sessions in a culturally sensitive manner, and how to appropriately handle emergency situations, including the detection of and procedures for handling child abuse or partner violence, especially in the postpartum “booster” session. Following completion of didactic training, each interventionist conducted “mock” sessions of the intervention and received supervision on the delivery of these “mock” sessions.

Data collection happened at four points: at intake (during pregnancy), after the groups during pregnancy, at two weeks postpartum (post-intervention), and at three months postpartum. Women were compensated for their time in the assessments after intake: \$10 for the assessment after the groups during pregnancy, \$25 for the 2-week assessment, and \$30 for the 3-month. This current study used the intake (for demographic data), the 2-week postpartum (post-intervention), and the 3-month postpartum assessment data. Assessment of participants’ breastfeeding was done at the 2-week and 3-month postpartum assessment. Women were asked about initiation of any type (exclusive or non-exclusive) of breastfeeding at the 2-week postpartum assessment and the duration they continued breastfeeding for (in days) at the 3-month postpartum assessment as part of an adapted Treatment Services Review (TSR) (McLellan, Alterman, Cacciola, Metzger, & O’Brien, 1992) that was also used to collect other data about medical and psychiatric care for analysis in the parent study (Zlotnick et al., 2006). Symptoms of depression was collected at the 2-week postpartum assessment.

Analysis

Breastfeeding outcomes—To determine whether ROSE affected breastfeeding initiation and duration, we compared initiation (y/n) among all participants and duration of breastfeeding among those who initiated breastfeeding in the intervention and control conditions. We used logistic regression to predict y/n breastfeeding (breastfeeding initiation) from intervention condition. Since the number of days breastfeeding is a count variable and is not normally distributed, the Mann-Whitney test was used to compare breastfeeding duration in the intervention and control conditions in the subset of women who initiated breastfeeding. No covariates were used in either analysis, per recent clinical trials guidelines (Ambrosius, 2009). Participants in the control and intervention conditions did not differ significantly at baseline on variables that may influence breastfeeding outcomes: depression risk, depression history, income, marital status, education, ethnicity, and age.

Intervening Variables—To gain some preliminary information about intervening variables, i.e., potential processes by which ROSE might affect breastfeeding, we explored whether depression (targeted in ROSE) near childbirth was related to breastfeeding initiation and duration using Spearman correlations. Severity of depressive symptoms was measured by the Edinburgh Postnatal Depression Scale (EPDS) (Gibson, McKenzie-McHarg, Shakespeare, Price, & Gray, 2009) at the 2-weeks postpartum interview. Only one woman who reported breastfeeding data was missing EPDS data. Though social support may also be an intervening variable by which ROSE might affect breastfeeding, we did not have an adequate measure of social support for this analysis, nor did we collect any data about group processes.

Results

Demographics

Of the sample of 99 women, 53.5% were single, and 67.7% had completed high school. 44.4% were Hispanic, 28.3% Caucasian, 14.1% African American, and 13.1% “Other”, which was representative of the clinic’s patient population. The mean age was 22.4 (SD=4.4) years. There were no significant differences between the two conditions on any of the demographic or clinical variables (e.g., history of past depression). Of the five sessions of the intervention, the mean number of sessions attended was 3.3 (SD=2.0) and the mode was 5.

Of the women for whom investigators had breastfeeding data, a majority initiated breastfeeding (n=54 of 92; 59%). Among the 54 women who initiated breastfeeding, median duration of breastfeeding was 30 days (SD=33.6). Thirteen women (24%) breastfed seven days or less, and 13 (24%) were still breastfeeding 90 days after delivery.

Breastfeeding outcomes

The experimental condition was not a significant predictor of breastfeeding initiation ($B=0.25$, $SE[B]=0.42$, $Wald=0.34$, $df=1$, $p=0.55$, $Exp[B]=1.29$, $95\% CI=0.56 - 2.96$); 62% (29 of 47) of women in the ROSE condition and 56% (25 of 45) of women in the control condition initiated breastfeeding.

However, among women who initiated breastfeeding (n=54), assignment to the ROSE condition predicted longer breastfeeding duration relative to the standard care condition ($p=.013$). Women in the ROSE condition breastfed a median of 54 days (SD=32.5) while women in the standard care condition breastfed a median of 21 days (SD=31.6). Only 24% of women in the standard care condition breastfed at least 54 days, the median of the ROSE condition. Twice as many women in ROSE (32% vs. 16%) were still breastfeeding at three months postpartum. In contrast, 40% of women in standard care breastfed seven days or less, whereas only 11% of those in the ROSE condition stopped breastfeeding during that period of time.

Intervening Variables

EPDS depressive symptom scores at two weeks postpartum were not correlated with breastfeeding initiation (Spearman correlation=-.13, $p=.21$, $n=91$), or, in the sample of women who initiated breastfeeding, with breastfeeding duration (Spearman correlation=-.09, $p=.52$, $n=53$).

Discussion

In a sample of pregnant women on public assistance and at risk for PPD, those who received an interpersonally-based psychoeducational group intervention in addition to standard care had, at three months postpartum, a significantly longer duration of breastfeeding than those who received only standard antenatal care. The intervention did not have a significant effect on breastfeeding initiation. Depressive symptoms, an intervening variable by which the intervention could theoretically be effective, was not significantly related to breastfeeding initiation or duration as measured in this study.

The present study was unable to identify specific variables that may have accounted for the ROSE's effect on breastfeeding duration. Since the literature suggests that symptoms of depression can lead to decreased breastfeeding, and ROSE successfully reduced risk of PPD, the investigators considered the possibility that these reduced depression symptoms may account for the increase in breastfeeding duration. Our results did not show this to be the case as depression was not significantly related to breastfeeding initiation or duration. Some prior studies on the causality of the association between symptoms of depression and breastfeeding concluded that breastfeeding cessation leads to higher rates of maternal depressions, while some asserted the opposite directionality (Hatton et al., 2005; Ystrom, 2012). The investigators also considered improved social support a possible intervening variable since ROSE encourages new mothers to ask for assistance from others and helps them practice skills for assertively making requests. However, data on social relationships were inadequate for determining levels of social support as the measure used (i.e., Social Adjustment Scale; Weissman & Paykel, 1974) focused on social role functioning, such as relationship friction and satisfaction with communication and did not measure the kind of interpersonal skills addressed in this intervention, such as making assertive requests, setting boundaries, etc.. It therefore was not possible to determine whether ROSE affected breastfeeding outcomes by strengthening emotional social support and/or by increasing instrumental or practical support for sustaining breastfeeding. For example, ROSE participants learned the importance of self-care and of asking for help in the postpartum period (e.g., help with the woman's other children, assistance so the mother could get needed sleep). It is unsurprising that a new mother receiving practical assistance and with her needs met (e.g., sleep, food) may be better able to sustain breastfeeding practices (Stewart-Knox, Gardiner, & Wright, 2003). In addition, since ROSE targeted strategies to manage the transition to motherhood, it is possible that these strategies mitigated postpartum stress and improved maternal self-efficacy, increasing the mother's comfort level with breastfeeding. Less postpartum stress and greater maternal self-efficacy may be particularly salient for low-income mothers because they experience many stresses related to lack of resources and low social support (Dominguez & Watkins, 2003; Raver & Leadbeater, 1999).

There are several limitations of this study. One limitation is the lack of adequate control groups. Were the results obtained because of the extra time and attention that women in the ROSE intervention received, or was it because of their participation in the group intervention? The lack of adequate measures of social support and lack of any measures of group process variables made it impossible to assess the impact any specific variable associated with group participation. Hence, we were unable to identify the “active ingredients” of the group intervention. It would be valuable to know, for example, whether mothers in groups with higher cohesion had better outcomes. Not only would such information be valuable in assessing outcome, it would also have significant implications for effective training of group leaders. Duration of breastfeeding was only assessed in the three months postpartum period and therefore, it is unknown if the effect of the intervention was sustained beyond three months. Nevertheless, the literature suggests that the 33-day increase in median breastfeeding duration observed in the results of this study is substantial in this vulnerable population, especially as each additional week of breastfeeding has been linked to a 4% decrease in the likelihood of an illness requiring a visit to a health care provider (Pettigrew et al., 2003). Other intervening variables to explain findings, such as improved self-care and self-efficacy in the postpartum period, were not measured and therefore could not be examined. Lastly, our findings may not generalize to other populations of women, such as those with middle or high incomes, specific racial/ethnic groups, or those at low risk for PPD.

Despite these limitations, study results suggest that ROSE may increase breastfeeding duration in a sample of low-income ethnically-diverse mothers, a population experiencing lower rates of breastfeeding than the general population and with which previous interventions have had limited success. Our findings indicate that the ROSE intervention, designed to reduce the risk of PPD, may have broader benefits than originally expected. As a brief, low-cost intervention based on IPT, ROSE required only limited training for nurse group leaders, was delivered in an inner city medical setting and positively influenced breastfeeding in low-income women. In addition, the majority of the support in the intervention can be provided in the prenatal period, which mitigates the oft-encountered steep drop in program attendance from the prenatal to the postpartum period (Elliott et al., 2000). The brief format of the intervention increases its ease of use and transportability and the group format decreases costs, which are factors critical for utilization of the intervention in various settings that care for underserved populations.

Clinical applications of the ROSE Program’s format as a psychoeducational group program based on IPT may extend not only to breastfeeding but also to other medical problems. The time-limited nature of the intervention, limited training necessary to achieve outcomes, cost effectiveness, and ease of dissemination make the ROSE format an appealing possible approach to addressing other major public health concerns such as diabetes, heart conditions, etc.

Future studies are needed to replicate the findings of this study, to measure and identify the factors by which the intervention affected breastfeeding, and to increase the follow-up period to observe how effects are sustained past three months.

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