

# The Effect of Peer Support on Postpartum Depression: A Pilot Randomized Controlled Trial

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**Objective:** To evaluate the effect of peer support (mother-to-mother) on depressive symptomatology among mothers identified as high-risk for postpartum depression (PPD).

**Method:** Forty-two mothers in British Columbia were identified as high-risk for PPD according to the Edinburgh Postnatal Depression Scale (EPDS) and randomly assigned to either a control group (that is, to standard community postpartum care) or an experimental group. The experimental group received standard care plus telephone-based peer support, initiated within 48 to 72 hours of randomization, from a mother who previously experienced PPD and attended a 4-hour training session. Research assistants blind to group allocation conducted follow-up assessments on diverse outcomes, including depressive symptomatology, at 4 and 8 weeks postrandomization.

**Results:** Significant group differences were found in probable major depressive symptomatology (EPDS > 12) at the 4-week ( $\chi^2 = 5.18$ ,  $df = 1$ ;  $P = 0.02$ ) and 8-week ( $\chi^2 = 6.37$ ,  $df = 1$ ;  $P = 0.01$ ) assessments. Specifically, at the 4-week assessment 40.9% ( $n = 9$ ) of mothers in the control group scored > 12 on the EPDS, compared with only 10% ( $n = 2$ ) in the experimental group. Similar findings were found at the 8-week assessment, when 52.4% ( $n = 11$ ) of mothers in the control group scored > 12 on the EPDS, compared with 15% ( $n = 3$ ) of mothers in the experimental group. Of the 16 mothers in the experimental group who evaluated the intervention, 87.5% were satisfied with their peer-support experience.

**Conclusions:** Telephone-based peer support may effectively decrease depressive symptomatology among new mothers. The high maternal satisfaction with, and acceptance of, the intervention suggests that a larger trial is feasible.

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## Clinical Implications

- If researched further, telephone-based peer support may be a beneficial postpartum depression (PPD) treatment, used in collaboration with professional health care services.
- This pilot trial demonstrated the feasibility of implementing and evaluating a PPD peer-support program.
- New mothers are receptive to telephone-based support interventions.

## Limitations

- A larger randomized controlled trial is required.
- Evaluation of outcome data was limited to self-report.
- There was insufficient power to detect group differences related to secondary outcomes.

**Key Words:** *pilot test, randomized controlled trial, postpartum depression, peer support, social support*

Childbirth represents for women a time of great vulnerability to becoming mentally unwell, with postpartum mood disorders representing the most frequent form of maternal morbidity following delivery (1). In general, women who experience these conditions form 2 subgroups: those who have been mentally well prior to pregnancy; and those who are already suffering or have suffered from a psychiatric illness, which predisposes them more in the postpartum period. Affective disorders following childbirth range in severity from the early “maternity blues” to postpartum psychosis, a serious state affecting less than 1% of mothers and usually requiring hospitalization (2). Along this spectrum is postpartum depression (PPD), classified in the DSM-IV as a depressive condition that often exhibits the disabling symptoms of dysphoria, emotional lability, insomnia, confusion, anxiety, guilt, and suicidal ideation (3). Frequently exacerbating these indicators are low self-esteem, inability to cope, negative maternal attitudes, and loneliness (4–7). The inception rate is greatest in the first 12 weeks postpartum (8), with duration frequently depending on symptom severity (9) and delay in adequate treatment (10). Residual depressive symptoms are common (11,12), and 50% of mothers will remain clinically depressed at 6 months (13,14). An estimated 25% of women with untreated PPD will experience clinical depression that continues past the first year postpartum (15,16).

Unfortunately, PPD is a major health issue for many women. Longitudinal and epidemiologic studies have yielded varying prevalence rates, ranging from 3% to more than 25% of women in the first year after delivery. These rates fluctuate owing to sample size, timing of assessment, differing diagnostic criteria (that is, major or minor depression), and whether the studies were retrospective (yielding low rates) or prospective (yielding rates that are higher by six- to tenfold). A metaanalysis of 59 studies reported the overall prevalence of major PPD to be 13% (17); the absolute difference in estimates between self-report assessments and diagnostic interviews was small. While national Canadian statistics are unknown, a longitudinal study of 645 British Columbia (BC) mothers has just been completed by Dennis (unpublished data). Measured according to the Edinburgh Postnatal Depression Scale (EPDS) (18), the prevalence of probable major PPD at 4 and 8 weeks postpartum was found to be 9.1% and 8%, respectively, while the corresponding occurrence of probable minor PPD was an additional 13.5% and 12.6%.

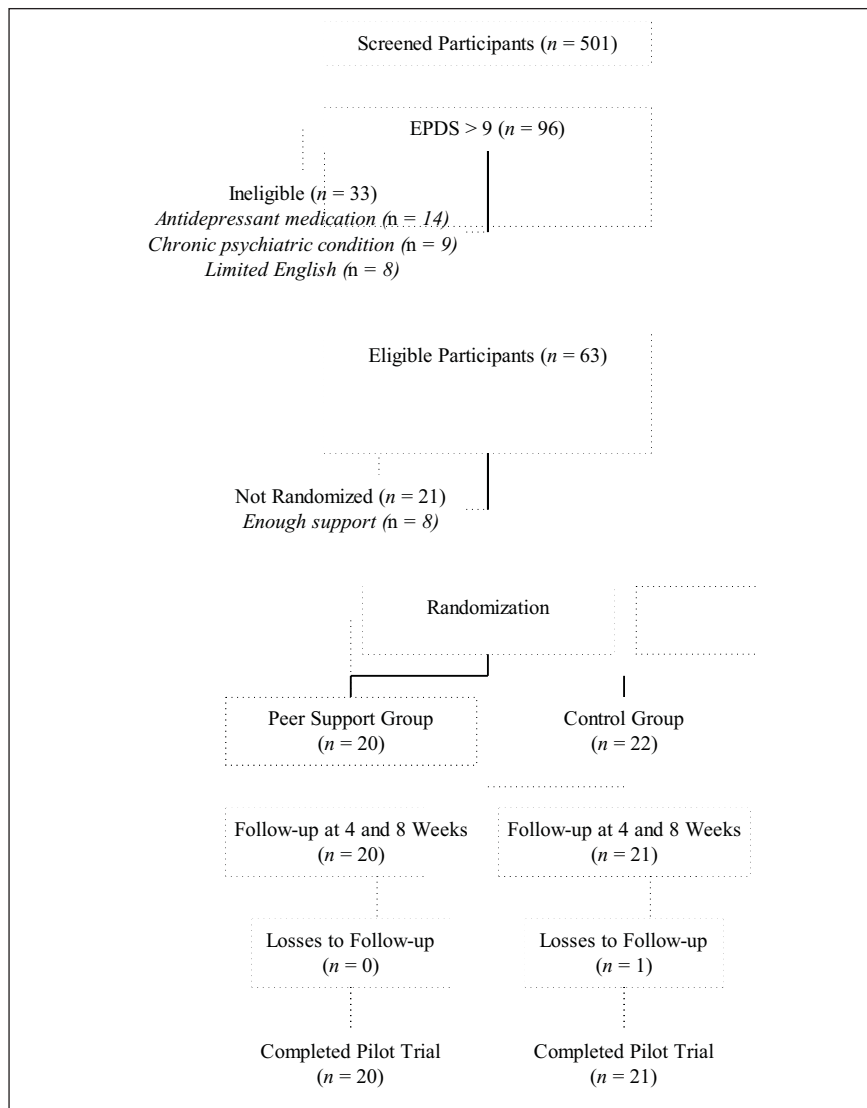
This hidden morbidity has well-documented health consequences for the mother, child, and family. While women who have suffered from PPD are twice as likely to experience future episodes of depression over a 5-year period (19), infants and children are particularly vulnerable. Mediated through impaired maternal infant interactions (20,21) and negative perceptions of infant behaviour (22,23), PPD has been linked

to various adverse outcomes, including attachment insecurity (24–26), emotional developmental delay (24,27), social interaction difficulties (28,29), and development of psychopathology (30). Infants as young as age 3 months have been shown to be able to detect the affective quality displayed by their mothers and to modify their own responses accordingly (31–33). While cognitive skills (34), expressive language development (35), and attention (36) have been negatively affected by PPD, it has also been reported that children of mothers suffering from depression are 2 to 5 times more likely to develop long-term behavioural problems (37–39). Child neglect or abuse (40) and marital stress resulting in separation or divorce (41,42) are other reported outcomes. Highlighted recently in the media, maternal and infant mortality is a rare but real consequence of PPD.

The etiology of PPD remains unclear (11,12). Despite considerable research (43), no single causative factor has been isolated, suggesting a multifactorial cause. However, epidemiologic investigations and comprehensive meta-analyses of predictive studies have consistently implied the importance of psychosocial variables (12,17,44,45). Precipitators that significantly increase the risk of PPD include life stress (17,44,46,47), child-care stress (44,47–49), marital conflict (7,44,46–48), low maternal self-esteem (7,44), and lack of social support (5,7,8,17,44,47,50). Moreover, 2 metaanalyses propose a further risk of PPD among socially disadvantaged women (17,44).

Health professionals have developed diverse psychosocial interventions congruent with the PPD vulnerability-stress model (47). Randomized controlled trials evaluating cognitive-behavioural counselling with antidepressants (51), cognitive-behavioural therapy and nondirective counselling (52), health visitor led nondirective counselling (53,54), and nurse-facilitated support groups (55) have all demonstrated the amenability of PPD to professional treatment (56). However, a growing trend in health care, and in postpartum care particularly, is the use of lay support. In predictive studies, detailed analyses of support variables suggest that the following social deficiencies significantly increase the risk of PPD: not having someone to talk openly with who has shared and understood a similar problem (50), not having an intimate confidante or friend to converse with (50,57–59), not receiving support without asking (50), and feeling socially isolated (7). Conversely, companionship and belonging to a group of similar others had a protective effect (60). When women were asked for their own explanations as to why they experienced PPD, they commonly responded with “lack of support” and “feeling isolated.” When asked what advice they would give to new mothers currently suffering from PPD, the foremost suggestion proffered was “find someone to talk to” (61). In a recent BC longitudinal study, maternal mood was

Figure 1 Trial schema



significantly correlated with perceived support from other women with children (Dennis, unpublished data). Similarly, 6 focus groups conducted with BC mothers who suffered from PPD further validated the saliency of support from other mothers (62). These results suggest that support provided by an experienced mother may be a simple intervention to address PPD and its unfavourable effects on mothers and infants. However, no study evaluating the effect of peer support on PPD symptomatology was found. Therefore, this pilot randomized controlled trial evaluated the effect of mother-to-mother support on depressive symptomatology among new mothers and determined the feasibility of conducting a larger trial. It was hypothesized that new mothers who received telephone-based support from women who previously experienced PPD would have decreased depressive

symptomatology, compared with mothers who did not receive the supportive intervention.

## Methods

### Participants

Participants were recruited from a health region near Vancouver, British Columbia, between May 1, 2001, and October 31, 2001. Mothers were identified through region-wide screening at the 8-week immunization clinics managed by public health nurses. Eligible participants were all new mothers between 8 and 12 weeks postpartum who were aged at least 18 years, were able to speak English, had a singleton birth at 37 weeks' gestation or more, scored > 9 on the EPDS, resided in the surrounding region, and were accessible by a local telephone call. Exclusion criteria included current use of antidepressant medications; a history of psychotherapy during the previous 12-month period; and a history of chronic depression, psychiatric clinical disorder, or postpartum psychosis.

### Design Overview

A pilot randomized controlled trial (Figure 1) was conducted, using a previously conducted peer-support trial as a framework (63). After completing informed-consent procedures approved by the University of British Columbia ethics committee, as well as a baseline questionnaire, mothers were randomized to either a control or an experi-

mental group. Randomization was achieved by using consecutively numbered, sealed, opaque envelopes containing randomly generated numbers. This procedure was constructed by a research assistant who was not involved in the recruitment process. Women allocated to the control group had access to the standard community postpartum services. Women allocated to the experimental group also had access to all the standard services, in addition to being paired with a peer volunteer. Research assistants blind to group allocation telephoned all participants at 4 weeks postrandomization to assess depressive symptomatology, and again at 8 weeks post-randomization to assess all outcome data. At the end of the 2-month follow-up, mothers in the experimental group answered questions regarding their peer-support experience.

*Intervention*

Peer support was defined as a specific type of social support that incorporates informational, appraisal (feedback), and emotional assistance. This lay assistance is provided by volunteer individuals who are not part of the mother's own family or immediate social network but who possess experiential knowledge of the targeted behaviour or stressor (that is, PPD) and similar qualities (such as similar residency, age, socio-economic status, or ethnicity). Because no program previously existed, a mother-to-mother telephone-based support intervention was developed, entitled "Mothers Helping Mothers with Postpartum Depression."

*Recruitment and Training of Peer Volunteers.* Potential volunteers were reached through the distribution of flyers, ads in the local newspapers, and by word of mouth. Nineteen experienced mothers volunteered and met the following selection criteria: history of and recovery from PPD, desire to help new mothers, and completion of a 4-hour training session. The training session focused primarily on developing telephone support and referral skills and included role-playing, verifying problem-solving skills, and developing the ability to refer mothers to an appropriate professional service. The author developed a 118-page handbook for distribution to all peer volunteers. This handbook outlined professional services available for referral and was to be used as a reference guide. It also incorporated various topics, including a definition of peer support, potential benefits, how to develop a relationship, skills and techniques for effective telephone support, general PPD information, and the helping process.

During the training sessions, the author described the pilot trial and answered questions. Peer volunteers who wanted to participate in the study were assigned a volunteer code number to promote confidentiality, were requested to complete a demographic form, and were given peer-volunteer activity logs that included postage-paid, addressed envelopes. These activity logs enabled the peer volunteers to document their specific interactions with the trial participants. Most of the peer volunteers who participated in the pilot trial were married (90%) and had some postsecondary education (79%); 84% were multiparous, and 42% were employed outside the home, either full-time or part-time. In addition to the peer volunteers, 2 regional volunteer coordinators were selected. The volunteer-coordinator responsibilities included attending the training sessions, matching trial participants with an appropriate peer volunteer, ensuring support was initiated, and providing assistance to peer volunteers, as required.

*Intervention Procedures.* The volunteer coordinator paired each new mother with a peer volunteer, based on residency and availability. There were no efforts to standardize the number of new mothers supported by a peer volunteer at any particular time or throughout the pilot trial. Peer volunteers

were contacted within 1 to 2 days of trial enrolment and provided with the new mother's telephone number and address. Peer volunteers were asked to contact the new mother within 48 hours and as frequently thereafter as the individual mother deemed necessary. To individualize the intervention to each mother's specific needs and to give credibility to the peer volunteers' experiential knowledge, contact frequency was not standardized, a known effective strategy (63). To enhance understanding of the peer-support intervention and to monitor trial fidelity, the volunteer activity logs were reviewed in relation to the peer-volunteer interactions.

*Outcome Measures*

*Depressive Symptomatology.* The primary outcome analyzed in this pilot trial was depressive symptomatology, determined at 8 weeks postrandomization and defined as a score > 12 on the EPDS. The EPDS is a 10-item, self-report instrument developed to assess maternal mood. Items are rated on a 4-point scale to produce a summative score ranging from 0 to 30, with higher scores indicating lower maternal mood. This internationally used instrument does not diagnose PPD, which is possible only through a psychiatric interview, but it is the most frequently used instrument to assess for PPD symptomatology (44). Validated by standardized psychiatric interviews with large samples (18), the EPDS has well-documented reliability and validity in multiple languages (64); a large community study revealed a specificity of 92.5% and a sensitivity of 88% (65). Apart from its widespread use, the EPDS was chosen to identify mothers and measure the primary outcome because it has the following features: ease of administration (including via telephone) (66); uncomplicated interpretation (8); high maternal and health-professional acceptance (18,65,66); good sensitivity, specificity, and predictive power when a cut-off point of > 9 has been used for community-level screening (65,66); and simplicity of incorporation into routine clinical practice (8), should future PPD programs be developed. The respective Cronbach's alpha coefficients for this scale at baseline and the 4- and 8-week assessments were 0.87, 0.88, and 0.89.

*Maternal Self-Esteem.* This outcome was measured using the Rosenberg Self-Esteem Scale (SES) (67), a 10-item, self-report instrument developed to assess global feelings of self-worth. Items are rated on a 4-point Likert-type scale to produce a summative score ranging from 10 to 40, with higher scores indicating higher levels of self-esteem. The SES has been psychometrically tested using diverse samples, including new mothers (68,69), and it has demonstrated good reliability and validity. Lower self-esteem has been associated with more depressive symptomatology in postpartum women (4,44,70,71) and is amenable to psychosocial interventions (72,73). The respective Cronbach's alpha coefficients for this scale at baseline and at the 8-week assessment were 0.93 and

0.87. It was hypothesized that peer support would increase self-esteem.

*Child-Care Stress.* This outcome was measured using the Child-Care Stress Checklist (CCSC), a 20-item, self-report instrument developed to assess stress related to the birth of a new baby. Items are rated on a yes–no scale to produce a summative score ranging from 0 to 20, with higher scores indicating higher levels of child-care stress. The CCSC was developed by the author based on a literature review of common maternal stressors and in response to the lack of a valid measure. The CCSC was psychometrically tested with 645 new mothers and demonstrates good reliability and validity (unpublished data). For this study, the respective Cronbach's alpha coefficients at 4 and 8 weeks postpartum were 0.81 and 0.81; the retest correlation between weeks 4 and 8 was 0.72. Because higher child-care stress has been associated with more depressive symptomatology in postpartum women (44,74–76), construct validity was supported through significant correlations between the CCSC and corresponding EPDS at 4 weeks ( $r = 0.61$ ) and 8 weeks ( $r = 0.60$ ) postpartum. The respective Cronbach's alpha coefficients for this scale at baseline and at the 8-week assessment were 0.80 and 0.78. It was hypothesized that peer support would decrease child-care stress.

*Maternal Loneliness.* This outcome was measured using the short version of the UCLA Loneliness Scale (LS) (77), a 10-item, self-report instrument designed to measure the extent to which an individual feels emotionally and socially lonely. Items are rated on a 4-point Likert-type scale to produce a summative score ranging from 10 to 40, with higher scores indicating higher degrees of loneliness. The LS has been shown to have good psychometric characteristics with diverse populations, including new mothers (77). Higher perceived loneliness has been associated with more depressive symptomatology in postpartum women (7,78), and with depression in general (77). The respective Cronbach's alpha coefficients for this scale at baseline and at the 8-week assessment were 0.90 and 0.91. It was hypothesized that peer support would decrease maternal loneliness.

*Maternal Perceptions of Peer Support.* This outcome was measured using the Peer Support Evaluation Inventory (PSEI), a 4-subscale self-report instrument developed to measure a mother's perception of the support received from her peer volunteer. The subscales assess supportive interactions (for example, emotional, appraisal, and informational support), relationship qualities (for example, perceived peer responsiveness, extent of interdependence, and peer qualities), perceived benefits (for example, potential health outcomes related to the 3 theoretical perspectives of social integration, stress and coping, and social constructionism), and satisfaction with support (for example, access,

convenience, and perceived quality). This self-report instrument is based on extensive theoretical work completed by the author during a postdoctoral research fellowship. Content validity was assessed by 1 Canadian and 2 US social-support experts. The Cronbach's alpha coefficients for the subscales were as follows: supportive functions = 0.95; relationship qualities = 0.96; perceived benefits = 0.92; and satisfaction = 0.96. This outcome was assessed via mailed questionnaires sent between 12 and 14 weeks postrandomization.

*Peer-Volunteer Perceptions of Peer Support.* This outcome was measured using the Peer Volunteer Experience Questionnaire (PVEQ) (78). Questions are related to program training and expectations, interactional characteristics, volunteer roles, intrapersonal effect, and recruitment and retention. This outcome was assessed via mailed questionnaires sent at the end of the pilot trial.

*Peer-Volunteer Activities.* All intervention activities, including telephone discussions, left messages, and face-to-face contacts, were documented by the peer volunteers using the Peer Volunteer Activity Log (63). Peer volunteers were asked to return all activity logs 8 to 12 weeks after being matched with a new mother.

#### *Data Management and Analysis*

Data were entered into a data management system by a research assistant blind to group allocation, and logic and range checks were used to verify the accuracy of the data. Any discrepancies were compared with the original data forms. Discontinuation of the intervention ( $n = 1$ ) did not entail the participant's exclusion from the study, and an "intention to treat" approach was used to analyze these data. The data are presented using descriptive statistics (means, SDs, or proportions). For categorical data, Pearson's chi-square test was used to examine differences between the 2 study groups. Independent 2-sample  $t$ -tests were conducted for data at the interval level of measurement. Pearson's correlations were used to examine the relation between the frequency of peer-volunteer contacts and maternal mood. Odds ratios (ORs) and corresponding 95% confidence intervals (CIs) were estimated.

## Results

Of the 501 mothers who completed the screening EPDS at 8 weeks postpartum, 96 scored  $> 9$  (19.2%). Of these mothers, a further 33 were ineligible. The most common reasons for ineligibility were current use of antidepressant medication ( $n = 14$ ), chronic psychiatric condition ( $n = 9$ ), and limited English ( $n = 8$ ). It is important to note that the ineligibility of 14 mothers owing to current antidepressant medication use clearly suggests that peer support is not an adequate treatment option for all cases of postpartum depression. Of the 63 eligible mothers, 21 (33%) declined enrolment, most frequently citing

**Table 1 Baseline characteristics of randomized participants**

Variable	Level	Experimental group ( <i>n</i> = 20)		Control group ( <i>n</i> = 22)	
		<i>n</i>	%	<i>n</i>	%
Age	18–24 years	2	10	4	18
	25–34 years	16	80	16	73
	≥ 35 years	2	10	2	9
Marital status	Married or common-law	20	100	22	100
Education	High school	4	20	7	32
	College or university	16	80	15	68
Born in Canada	Yes	17	85	18	82
Annual household income	\$0–39 999	9	50	12	55
	\$40 000–79 999	8	44	6	27
	\$80 000 +	1	6	4	18
Parity	Primiparous	7	35	7	32
Mode of delivery	Caesarean section	3	15	4	18
History of postpartum depression	Yes	4	20	4	18

**Table 2 EPDS scores between groups**

EPDS score	Time	Experimental group ( <i>n</i> = 20)	Control group ( <i>n</i> = 22)	OR	95% CI	<i>P</i>
		<i>n</i> (%)	<i>n</i> (%)			
> 9	4 weeks	9 (45)	16 (72.7)	3.26	0.90 to 11.81	0.06
	8 weeks	7 (35)	16 (76.2) <sup>a</sup>	5.94	1.52 to 23.18	0.008
> 12	4 weeks	2 (10)	9 (40.9)	6.23	1.15 to 33.77	0.02
	8 weeks	3 (15)	11 (52.4) <sup>a</sup>	6.23	1.40 to 27.84	0.01

<sup>a</sup>*n* = 21; EPDS = Edinburgh Postnatal Depression Scale

a sufficient support network (*n* = 9). Thus, the acceptance rate for enrolment in the trial was 67%, indicating that, while most mothers were receptive to the offer of peer support, a single intervention is not acceptable to all mothers. No significant baseline differences in age, education, income, and EPDS score were found between mothers who participated in the trial and mothers who were eligible to participate but refused. Of the 42 participants enrolled, only 1 mother (in the control group) did not complete the 8-week assessment. Table 1 presents characteristics of the trial participants. There were no statistically significant differences between the 2 groups.

Significantly more mothers in the experimental group exhibited decreased depressive symptomatology at the 4-week ( $\chi^2 = 5.18$ , *df* = 1, *P* = 0.02) and 8-week ( $\chi^2 = 6.37$ , *df* = 1, *P* = 0.01) assessment (Table 2). Specifically, at the 4-week assessment, 40.9% (*n* = 9) of mothers in the control group had EPDS scores > 12, compared with only 10% (*n* = 2) in the experimental group. Comparable findings were found at the 8-week assessment, at which time 52.4% (*n* = 11) of mothers in the control group and 15% (*n* = 3) of mothers in the experimental group continued to score > 12 on the EPDS. After the baseline

characteristics evident in Table 1 were controlled, logistic regression was conducted to assess the effect of the peer-support intervention on depressive symptomatology. The results indicated that the peer-support intervention significantly decreased depressive symptomatology at the 8-week assessment (OR = 4.7; 95% CI, 0.91 to 25.46). Specifically, mothers who received the peer-support intervention were over 4 times more likely to have decreased depressive symptomatology, compared with mothers who did not receive the supportive intervention.

When EPDS mean scores were assessed at 4 weeks, a significant difference was found between mothers in the control (mean 12.1, SD 4.6) and experimental (mean 8.5, SD 3.7) groups (*t* [40] = 2.8, *P* = 0.008). Similar group differences were found at the 8-week assessment (*t* [39] = 2.9, *P* = 0.006). While not statistically significant, positive trends favouring the experimental group were found in mean scores related to maternal self-esteem, child-care stress, and loneliness (Table 3).

The volunteer coordinator twice telephoned peer volunteers who did not return their activity logs. Sixteen of the 20 activity

**Table 3 Secondary outcomes between groups**

Variable	Time	Experimental group (n = 20) Mean (SD)	Control group (n = 22) Mean (SD)	Mean difference
Maternal self-esteem	Baseline	28.25 (4.19)	27.82 (3.92)	0.43
	8 weeks	30.00 (4.21)	28.57 (3.83) <sup>a</sup>	1.43
Child-care stress	Baseline	7.10 (3.24)	7.40 (3.44)	0.30
	8 weeks	4.95 (2.68)	6.48 (3.63) <sup>a</sup>	1.53
Maternal loneliness	Baseline	24.75 (4.88)	25.18 (5.50)	0.43
	8 weeks	20.37 (5.23)	23.91 (6.07) <sup>a</sup>	3.54

<sup>a</sup>n = 21

**Table 4 Summary of maternal perceptions of peer support from a sample of items**

Subscale	Domain	Maternal responses to sample items	Strongly agree (%)
Supportive interactions	Emotional support	My peer listened to me talk about my concerns	16 (100)
		Accepted me for who I was	15 (94)
		Told me I did something well	15 (94)
	Appraisal support	Gave me feedback on how I was doing	14 (88)
		Provided me with practical information	15 (94)
		Assisted me to solve my problems or concerns	15 (94)
Relationship qualities	Perceived peer responsiveness	I felt free to talk about almost everything with my peer	14 (88)
		My peer was dependable	14 (88)
		I felt accepted by my peer	14 (88)
		My peer understood my point of view	14 (88)
		I felt comfortable sharing with my peer	14 (88)
	Extent of interdependence	I felt close to my peer	14 (88)
		My peer invested time to help me	15 (94)
	Sentiment	My peer pressured me to change	0 (0)
		My peer was critical of me	0 (0)
	Peer qualities	My peer was interesting and enjoyable to talk to	15 (94)
My peer seemed anxious when talking to me		1 (6)	
Support from my peer helped me:			
Perceived benefits	Social integration	Feel less isolated	15 (94)
		Feel less left out	15 (94)
	Stress and coping	Feel more in control of my situation	13 (81)
		Feel less worried	13 (81)
		Respond better to stressful situations	14 (88)
	Social construction	Compare myself to similar others	12 (75)
Feel more confident		13 (81)	
Feel more positive about myself		13 (81)	
Satisfaction	Access	Set realistic goals	12 (75)
		I was able to talk to my peer when I needed to	13 (81)
	Convenience	I liked the support over the telephone	15 (94)
	Perceived quality	My peer was competent	15 (94)
		There is nothing I would have liked done differently	15 (94)

logs were returned, an 80% response rate. Peer-volunteer contacts were assessed and further subdivided into connections (actual peer–mother interactions, such as speaking on the telephone) and attempted connections (unsuccessful efforts to

connect, such as leaving a telephone message on an answering machine). The 16 activity logs showed that, during the 2 months monitored, peer volunteers logged 5 or more actual connections (mean 5.4, SD 3.5) and 5 attempted connections

**Table 5. Summary of peer-volunteer perceptions of their experiences**

Positive ("yes") responses	<i>n</i> (%)
1. Do you think the 4-hour training session prepared you for your peer volunteer role?	14 (87.5)
2. Would you have liked on-going educational sessions?	14 (87.5)
3. Do you think peer volunteers require some sort of supervision?	14 (87.5)
4. Should peer volunteers be evaluated to ensure a high quality of support?	13 (81.3)
5. Did you ever feel uncomfortable while supporting a mother?	4 (25)
6. Did you ever feel disappointed while supporting a mother?	8 (50)
7. Did you refer a mother to professional health services?	6 (37.5)
8. Did participating the program interfere with your life?	2 (12.5)
9. Did participating the program help you grow as an individual?	16 (100)
10. If you could do it over again, would you become a peer volunteer?	16 (100)

(mean 5.6, SD 2.6) for most mothers. The peer volunteers initiated most of the telephone contacts, with only 2 mothers initiating an interaction. The mean duration of a telephone connection was 34.4 minutes (SD 20), with a range of 6 to 90 minutes; 12 (75%) peer–mother relationships actively continued past the 2 months monitored. Finally, correlations showed that the number of peer-volunteer contacts was not significantly related to depressive symptomatology at the 4-week ( $r = 0.26$ ) or 8-week ( $r = 0.45$ ) assessments. Interestingly, data from the activity logs suggest that 37.5% of peer volunteers referred a mother to a professional health service.

Sixteen out of 20 participants (80%) evaluated their peer-support experience, with 87.5% ( $n = 14$ ) indicating that they were very satisfied. Most mothers felt that their peer volunteer provided them with emotional, informational, and appraisal support; understood them and was trustworthy; and had a positive health effect (Table 4). All 16 peer volunteers who completed the PVEQ were satisfied with their experience and would volunteer again (Table 5).

## Discussion

In this pilot trial, 15% of mothers who received peer support had EPDS scores  $> 12$  at the 8-week assessment, compared with 52.4% of mothers in the control group. The significant effect of peer support on depressive symptomatology at the 4- and 8-week assessments remained even after baseline demographic variables such as age, education, and income were controlled. Equally important is the finding that significantly more mothers in the control group had EPDS scores  $> 9$  at both assessment periods. Thus, peer support decreased not only the number of mothers who were potentially experiencing major PPD but also those with probable minor PPD. While no significant group differences were found in relation to maternal self-esteem, child-care stress, and loneliness, positive trends favouring the experimental group were demonstrated. These findings provide further evidence that the outcomes are amenable to supportive interventions. However, because there

was insufficient power to detect group differences, a larger trial is required to ascertain the true effects of these secondary outcomes.

The frequency and occurrence of peer-volunteer interactions were not correlated with EPDS scores at the 8-week assessment, suggesting that a standardized peer-support intervention is not necessary. This finding is congruent with those of Dennis (63) and Israel (80), who reported that it is not the quantity but the quality of social interactions and relationships that is most strongly associated with health outcomes. Another explanation for this finding may be that the active ingredient was not the actual receipt of peer support but the perception that a peer volunteer would be available to talk, if necessary. Research has indicated that perceived support may have a stronger influence on specific health outcomes than actual, enacted support (81).

Consistent with previous telephone-based supportive interventions for new mothers (79), both participants and peer volunteers evaluated their peer-support experience positively, although the extent to which social desirability influenced maternal and peer-volunteer evaluations is unknown. However, these findings indicate that the main pilot trial result—that telephone-based peer support may significantly decrease depressive symptomatology among some mothers—is an important preliminary clinical finding that warrants further research. Such future research should include a larger randomized controlled trial that assesses depressive symptomatology to at least 6 months postpartum in a heterogeneous sample.

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### Résumé : L'effet du soutien des pairs sur la dépression du post-partum : une étude pilote randomisée et contrôlée

**Objectif :** Évaluer l'effet du soutien des pairs (de mère à mère) sur la symptomatologie dépressive chez les mères reconnues à risque élevé de dépression du post-partum (DPP).

**Méthode :** Quarante-deux mères de la Colombie-Britannique ont été reconnues comme étant à risque élevé de DPP selon l'échelle de dépression post-natale d'Édimbourg (EPDS) et ont été affectées au hasard soit à un groupe témoin (c'est-à-dire, à des soins de post-partum communautaires ordinaires), soit à un groupe expérimental. Le groupe expérimental recevait les soins réguliers plus un soutien des pairs par téléphone, débutant entre 48 et 72 heures après la randomisation, d'une mère qui avait déjà connu la DPP et qui avait suivi une séance de formation de 4 heures. Des assistants de recherche ne connaissant pas l'affectation des groupes ont mené le suivi sur divers résultats, y compris la symptomatologie dépressive, à 4 et 8 semaines après la randomisation.

**Résultats :** Des différences significatives entre les groupes ont été constatées concernant la symptomatologie de dépression grave probable (EPDS 12) aux évaluations à 4 semaines ( $\chi^2 = 5,18$ , fr = 1;  $P = 0,02$ ) et à 8 semaines ( $\chi^2 = 6,37$ , fr = 1;  $P = 0,01$ ). Spécifiquement, à l'évaluation à 4 semaines 40,9 % ( $n = 9$ ) des mères du groupe témoin avaient des scores 12 à l'EPDS, comparativement à seulement 10 % ( $n = 2$ ) du groupe expérimental. Des résultats semblables ont été constatés à l'évaluation à 8 semaines, où 52,4 % ( $n = 11$ ) des mères du groupe témoin avaient des scores 12 à l'EPDS, comparativement à 15 % ( $n = 3$ ) des mères du groupe expérimental. Des 16 mères du groupe expérimental qui ont évalué l'intervention, 87,5 % étaient satisfaites de leur expérience de soutien des pairs.

**Conclusions :** L'intervention téléphonique de soutien par les pairs peut vraiment diminuer la symptomatologie dépressive chez les nouvelles mamans. La satisfaction élevée des mères quant à l'intervention et leur acceptation de celle-ci indique qu'une étude de plus grande taille est faisable.