

Systematic Review of the Literature on Postpartum Care: Effectiveness of Postpartum Support to Improve Maternal Parenting, Mental Health, Quality of Life, and Physical Health

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ABSTRACT: Background: Postpartum support is recommended to prevent infant and maternal morbidity. This review examined the published evidence of the effectiveness of postpartum support programs to improve maternal knowledge, attitudes, and skills related to parenting, maternal mental health, maternal quality of life, and maternal physical health. **Methods:** MEDLINE, Cinahl, PsycINFO, and the Cochrane Library were searched for randomized controlled trials of interventions initiated from immediately after birth to 1 year in postnatal women. The initial literature search was done in 1999 and was enhanced in 2003 and 2005. Studies were categorized based on the the above outcomes. Data were extracted in a systematic manner, and the quality of each study was reviewed. **Results:** In the 1999 search, 9 studies met the inclusion criteria. The 2003 and 2005 searches identified 13 additional trials for a total of 22 trials. Universal postpartum support to unselected women at low risk did not result in statistically significant improvements for any outcomes examined. Educational visits to a pediatrician showed statistically significant improvements in maternal-infant parenting skills in low-income primiparous women. In women at high risk for family dysfunction and child abuse, nurse home visits combined with case conferencing produced a statistically significant improvement in home environment quality using the HOME (Home Observation for Measurement of the Environment) program. Similarly, in women at high risk for either family dysfunction or postpartum depression, home visitation or peer support, respectively, produced a statistically significant reduction in Edinburgh Postnatal Depression Scale scores (difference - 2.23, 95% CI -3.72 to -0.74, $p = 0.004$; and 15.0% vs 52.4%, OR 6.23, 95% CI 1.40 to 27.84, $p = 0.01$, respectively). Educational programs reduced repeat unplanned pregnancies (12.0% vs 28.3%, $p = 0.003$) and increased effective contraceptive use (RR 1.35, 95% CI 1.09 to 1.68, $p = 0.007$). Maternal satisfaction was higher with home visitation programs. **Conclusions:** No randomized controlled trial evidence was found to endorse universal provision of postpartum support to improve parenting, maternal mental health, maternal quality of life, or maternal physical health. There is some evidence that high-risk populations may benefit from postpartum support. (BIRTH 33:3 September 2006)

Key words: postpartum period, postpartum care, systematic review, social support

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The postpartum period is a time of transition for a woman and her new family, when adjustments need to be made on physical, psychological, and social levels. Postpartum hospital stays in North America are often less than 48 hours for a vaginal birth, and thus most postpartum care is provided in the community and in ambulatory settings. Guidelines from Canada, the United States, and the World Health Organization emphasize the importance of early follow-up from an experienced clinician to prevent infant and maternal morbidity, after hospital discharge for women and their families (1–3). Psychosocial postpartum support programs have been promoted to improve maternal knowledge, attitudes, and skills related to parenting maternal mental health, maternal quality of life, and maternal physical health.

Despite recommendations for this type of supportive care, to our knowledge no comprehensive evaluation has been conducted of the effectiveness of postpartum support programs that could guide the development of evidence-based practice. This systematic review summarizes the randomized controlled trial literature evaluating the effect of various postpartum support strategies on maternal knowledge, attitudes, and skills related to parenting, maternal mental health maternal quality of life and maternal physical health.

Methods

The overall methodology including selection criteria, search strategy, data extraction, appraisal of studies, and assessment of quality has been published elsewhere (4). In brief, MEDLINE, Cinahl, PsycINFO, and the Cochrane Library were searched for randomized controlled trials of interventions initiated from immediately after birth to 1 year in postnatal women. Studies were eligible if they were conducted in North America, Europe, Australia, or New Zealand. The literature search was initially done in 1999 and then updated and enhanced with topic specific searches in 2003 and again in 2005 (4).

We defined postpartum support as an interpersonal interaction(s) between a postpartum woman and trained individuals or health care professionals. The support could be offered in several forms: telephone calls, individual home or clinic visits, or group clinic visits. We included studies in this review that examined women without previously identified mental or physical illnesses and that reported at least one of the following types of outcomes: maternal knowledge, attitudes and skills related to parenting, maternal mental health, maternal quality of life, or maternal physical health. Since the literature contains no consistent definitions, studies were included in the mater-

nal mental health category if one or more symptoms of depression, anxiety, or self-esteem were reported; in the quality-of-life category if a quality-of-life measure was used that evaluated both mental and physical health; and in the physical health category if physical signs or symptoms such as fatigue or reproductive health outcomes were reported. Studies that reported only data on health services utilization without clinical outcomes were excluded. Maternal satisfaction with postpartum support programs was examined when it was reported in the included studies.

Literature Search Results

One hundred forty randomized controlled trials were identified from the original literature search (conducted in 1999) that met our inclusion criteria. Of these 140 studies, 12 related to the topic of postpartum support. Of these 12 studies, 3 were subsequently excluded—2 studies because they did not include clinical outcomes (they reported only outcomes of health services utilization) (5,6) and 1 study because it focused exclusively on breastfeeding (7). This latter study has been included with other breastfeeding studies for a separate review. In the topic-specific search (conducted in 2003 and 2005), 15 additional studies on postpartum support were identified. Of these 15 studies, 2 were subsequently excluded, 1 that did not report any maternal outcomes and another that was not a randomized controlled trial. Thus, in total, 22 studies were included in the present review for which data was extracted (8–29).

Methodologic Quality

We used the Jadad scale (30) to assess the methodologic quality of each study. This scale assigns a numeric score for randomization, blinding, and description of dropouts (maximum score 5 points). Fourteen of the 22 studies scored 3 or greater out of 5. Although the majority of studies were not double blinded, the nature of most interventions made double blinding impractical. Further methodologic quality indicators, description of the study population, and intervention and trial characteristics are summarized in Table 1.

Clinical Questions

The trials evaluated in this review were grouped according to the following clinical questions:

Clinical question: *Are there any interventions that are effective at improving parenting knowledge, attitudes, and skills in the postnatal period?*

Evidence: Eight trials evaluated the impact of a support intervention on parenting (8,10,19,23–27). Three

Table 1. Postpartum Support: Study Characteristics Including Quality Measures and Results (studies listed alphabetically)

Study	Setting/Sample Size/Patient Characteristics/ Overall Follow-up Rate	Intervention	Control	Jadad Score	Blinding	Additional Quality Measures	Duration of		Conclusions
							Intervention (I)	Follow-up (F)	
Armstrong et al, Queensland Australia, 1999 (8)	Community 181 women with live birth who were at risk for family dysfunction or child abuse 96% follow-up	Nurse home visits weekly for 6 wk, and case conference care by pediatrician and social worker	Standard care (offered 1 home visit, unlimited clinic visits)	3	Inv: U Par: N OA: U	AC - Y ITT - U APC - Y	I: 6 wk F: 6 wk	Improved parent-infant interaction and increased satisfaction with service in all women Improved scores on Parenting Stress Index and on Edinburgh Postnatal Depression Scale in primiparas only	
Casey & Whitt, Chapel Hill, North Carolina, USA, 1980 (23)	Primary care clinic 47 primiparas > 16 yr with uncomplicated term pregnancy, family income <\$15,000/yr 68% follow-up	Visits with pediatrician at 2,4,8,15,21,27 wk - usual care plus discussion to enhance effective mother-infant interactions and infant cognitive development	Usual care, same timing of visits	2	Inv: N Par: N OA: Y	AC - U ITT - N APC - N	I: 7 visits F: 27 wk	Intervention group had better ratings in mother-infant relationship at 27 wk: interaction, cooperation, appropriateness of play, and sensitivity	
Dennis, Vancouver, British Columbia, Canada, 2003 (9)	Community 42 new mothers 18 yr or older with singleton birth and who were at high risk for pp depression 98% follow-up	Telephone-based peer support from a trained mother who had previously experienced pp depression plus standard care	Standard community pp care	3	Inv: N Par: N OA: Y	AC - Y ITT - Y APC - N	I: 48 to 72 hr after randomization F: 8 wk	Peer support (mother-to-mother interaction), decreased depressive symptoms (Edinburgh Postnatal Depression Scale)	
Edwards, Ottawa, Ontario, Canada, 1997 (10)	Community 972 low-risk primiparas with uncomplicated pregnancy 81% follow-up	2 Groups: G1: Public health nurse phone call at 1-2 wk post-discharge to assess and counsel on maternal and infant health G2: Health Department clerk phone call at 5 wk pp to remind of parent-baby group	Standard information package only	2	Inv: U Par: U OA: U	AC - U ITT - U APC - N	I: 1 time F: At > 3 mo pp, had phone interview	No effect on pp depression, maternal smoking, or infant care behaviors	

(continued)

Table 1. Continued

Study	Setting/Sample Size/Patient Characteristics/Overall Follow-up Rate	Intervention	Control	Jadad Score	Blinding	Duration of Intervention (I)/		Conclusions
						Additional Quality Measures	Duration of Follow-up (F)	
Escobar et al, Santa Clara, California, 2001 (11)	Hospital/home 1,014 women with uncomplicated pregnancy 96.4% follow-up	Home visit by registered nurse within 48 hr	Group visit at hospital, or individual visit at hospital within 72 hr	3	Inv: U Par: N OA: U	AC - Y ITT - Y APC - Y	I: 1 visit F: 2 wk	Home visits had no effect on depressive symptoms at 2 wk but increased maternal satisfaction
Gagnon et al, Montreal, Quebec, 2002 (12)	Hospital/community 586 women with uncomplicated pregnancy who participated in short stay program 85.2% follow-up	Phone call at 48 hr plus home visit at 3-4 days by registered nurses; continued nurse follow-up as needed	Phone call at 48 hr plus clinic visit at day 3 only	3	Inv: U Par: N OA: Y	AC - U ITT - Y APC - Y	I: Up to 4 days F: 2 wk	No effect on maternal anxiety or satisfaction with service
Gunn et al, Melbourne, Australia, 1998 (13)	One urban and one rural hospital 683 women, uncomplicated pregnancy 69.5% follow-up	Checkup 1 wk after hospital discharge with family physician	Checkup 6 wk after childbirth with family physician	3	Inv: N Par: N OA: N	AC - Y ITT - Y APC - Y	I: 1 postnatal visit F: 6 mo (after childbirth)	An early postnatal checkup was not more effective in improving SF-36 scores and pp depression
Johnson et al, Dublin, Ireland, 1993 (14)	Community 262 primiparas with uncomplicated pregnancy who delivered in a deprived area of Dublin 88.5% follow-up	Trained community mother visits once a month for 1 yr, plus standard public health nurse support (visit at birth, at 6 wk, and as needed)	Standard public health nurse support	3	Inv: N Par: N OA: N	AC - Y ITT - Y APC - N	I: 1 yr F: 1 yr	Improved maternal self-esteem (improvements in fatigue, feeling miserable, and desire to stay indoors)
Lieu et al, Sacramento, California, USA, 2000 (15)	Hospital/home 1,163 women with uncomplicated pregnancy and <48 hr hospital stay 97.5% follow-up	Home visit at day 3 or 4	Clinic visit at day 3 or 4	3	Inv: N Par: N OA: U	AC - Y ITT - Y APC - Y	I: 4 days F: 12 wk follow-up done at 2,6,12 wk	Home visit group had greater maternal satisfaction, but also greater cost No effect on pp depression

(continued)

Table 1. Continued

Study	Setting/Sample Size/Patient Characteristics/Overall Follow-up Rate	Intervention	Control	Jadad Score	Blinding	Additional Quality Measures	Duration of		Conclusions
							Intervention (I)	Follow-up (F)	
MacArthur et al, Birmingham, UK, 2002 (16)	Community 37 general practice clusters (2,064 women) Consenting practices and midwives 73% follow-up	Midwife visits and tailored care based on 10 evidence-based guidelines for main pp disorders	Routine pp care	3	Inv: N Par: N OA: N	AC - N ITT - Y APC - Y	I: 28 days F: 10-12 wk	Tailored care delivered by midwives based on needs assessment and guidelines improved women's psychological well-being and reduced pp depression No difference in physical component of the SF-36	
Morrell et al, Sheffield, UK, 2000 (17)	Community 623 women \geq 17 yr with uncomplicated pregnancy 79% follow-up	Support by trained postnatal workers plus usual care by community nurse midwives (10 visits up to 3 hr/day over 28 days)	Usual care by community nurse-midwives	2	Inv: N Par: N OA: N	AC - Y ITT - Y APC - Y	I: 28 days F: 6 mo	No difference in SF-36 scores or Edinburgh Postnatal Depression Scale scores at 6 mo	
O'Sullivan & Jacobsen, Philadelphia, Pennsylvania, USA, 1992 (21)	Hospital 243 primiparas \leq 17 yr with uncomplicated pregnancy who were unwed, on Medicaid, and African-American 91% follow-up	Education in family planning and health by social worker, nurse practitioner, and pediatrician	Standard well baby care	1	Inv: N Par: N OA: N	AC - U ITT - Y APC - N	I: 18 mo F: 18 mo	Reduced number of repeat unplanned pregnancies, increased proportion of fully immunized babies No effect on return to school or emergency room use	
Priest et al, Perth, Australia, 2003 (29)	Hospital 1,745 women with uncomplicated pregnancy > age 17 yr 99.1% follow-up	Individualized standardized debriefing session by trained midwives within 72 hr of delivery	Routine pp care	3	Inv: N Par: N OA: N	AC - Y ITT - U APC - Y	I: 1 interview F: 12 mo	1 session of a midwife-led stress debriefing was not effective at reducing pp psychological disorders	

(continued)

Table 1. Continued

Study	Setting/Sample Size/Patient Characteristics/Overall Follow-up Rate	Intervention	Control	Jadad Score	Blinding	Duration of Intervention (I)/ Follow-up (F)		Conclusions
						Additional Quality Measures	Measures	
Quinlivan et al, Western Australia, Australia, 2003 (22)	Teenage pregnancy clinic 136 women < 18 yr with no known fetal abnormality 91% follow-up	Home visits by certified nurse-midwives at 1 wk, 2 wk, 1 mo, 2 mo, 4 mo, and 6 mo after birth	No home visits (only routine postnatal services)	3	Inv: N Par: N OA: N	AC - Y ITT - Y APC - Y	I: 6 mo F: 6 mo	Home visits improved contraceptive outcomes (mothers' knowledge of contraception and effective use of contraception) Postpartum education by certified nurse-midwife did not increase mothers' knowledge
Regan & Lydon-Rochelle, Albuquerque, New Mexico, USA, 1995 (24)	University hospital 100 primiparas who were certified nurse-midwife clients	Written instruction plus individual education by certified nurse-midwife on the 3rd or 4th day after delivery	Written instruction only	3	Inv: N Par: N OA: N	AC - U ITT - Y APC - N	I: 1 time F: No follow-up period	Outcome measured immediately post-intervention
Reid et al, Ayrshire & Grampian, Scotland, 2002 (18)	Community 1,004 primiparas with uncomplicated pregnancy 86.6% follow-up	3 Groups: G1: Received self-help manual at 2 wk pp G2: Received invitation to attend support group at 2 wk pp G3: Received both self-help manual and invitation to attend support group at 2 wk pp	Usual care	3	Inv: U Par: N OA: U	AC - U ITT - Y APC - Y	I: 1 mailing for manual F: Weekly group meetings for 2 hr each for 6 mo F: 6 mo	No difference in SF-36 scores, Edinburgh Postnatal Depression Scale scores, or social support measures Attendance at group sessions was only 18%
Serwint et al, Baltimore, Maryland, USA, 1991 (19)	Hospital 251 women with uncomplicated pregnancy 90% follow-up	Routine nursery care plus hospital provider visit at 24 hr, and 24-hr access to medical doctor by phone for 1 mo	Routine nursery care with visit to provider at 2 wk pp	1	Inv: N Par: N OA: Y	AC - N ITT - Y APC - N	I: 2 mo F: 90 days	An early pp primary care visit with phone access had no effect on maternal knowledge of infant care, maternal anxiety, or pp depression, but increased number of clinic visits

(continued)

Table 1. Continued

Study	Setting/Sample Size/Patient Characteristics/Overall Follow-up Rate	Intervention	Control	Jadad Score	Blinding	Additional Quality Measures	Duration of Intervention (I)/ Follow-up (F)		Conclusions
							Measures	Measures	
Siegel et al, Chapel Hill, North Carolina, USA, 1980 (25)	Hospital 321 women with uncomplicated pregnancy 73.8% follow-up	3 Groups: G1: Early and extended hospital contact only (45 min in first 3 hr and at least 5 hr/day after that) G2: Home visits only G3: Hospital contacts and home visits (9 visits in first 3 mo)	Routine hospital and follow-up care	1	Inv: N Par: N OA: Y	AC-U ITT-N APC-N	I: 12 mo F: 12 mo	No effects on attachment, abuse, neglect, or health care use	
Simons et al, London, UK, 2001 (20)	Community clinics 1,069 women All mothers currently living with a partner who attended for a 6-8 wk check with a health visitor 68.5% follow-up	Interview by trained health visitor who identified and offered support to women at risk of significant relationship issues	Usual care by a health visitor	2	Inv: U Par: U OA: U	AC-U ITT-Y APC-Y	I: 1 interview F: 12 wk	No effect on personal well-being (feelings and capabilities) or relationships	
Small et al, Melbourne, Australia, 2000 (28)	Hospital 1,041 women with operative deliveries 88% follow-up	Individualized standardized debriefing session by trained midwives before hospital discharge	Information pamphlet	3	Inv: N Par: N OA: N	AC-Y ITT-U APC-Y	I: 1 interview F: 6 mo	A single midwife-led debriefing session was ineffective at reducing maternal psychosocial morbidity	
Stanwick et al, Laval, Quebec, Canada, 1982 (26)	Community 156 women with a live delivery	Public health nurse single home visit within 21 days of delivery	No home visits during study period (a visit 21-42 days after delivery)	4	Inv: N Par: Y OA: Y	AC-U ITT-N APC-N	I: 1 time F: at 4 wk after delivery	A public health nurse single home visit increased mother's confidence in caring for her infant, but had no effect on maternal knowledge or skills	

(continued)

Table 1. Continued

Study	Setting/Sample Size/Patient Characteristics/Overall Follow-up Rate	Intervention	Control	Jadad Score	Blinding	Additional Quality Measures	Duration of		Conclusions
							Intervention (I)	Follow-up (F)	
Steel O'Connor et al, Kingston, Ontario, Canada, 2003 (27)	2 tertiary care hospitals 733 primiparas delivering singleton infant with uncomplicated pregnancy and discharged within 2 days of birth 95% follow-up at 4 wk 69.6% follow-up at 6 mo	2 home visits by public health nurse for assessment and further referral to support services where necessary	Screening phone call by public health nurse designed to identify mothers requiring further intervention	2	Inv: N Par: N OA: U	AC - Y ITT - Y APC - Y	I: 10 days after discharge F: 4 wk and 6 mo	No differences in maternal confidence at 2 wk or breastfeeding rates at 6 mo	

pp = postpartum; U = unclear; Inv = investigator; AC = allocation concealment; N = no; Y = yes; Par = participant; ITT = intention to treat; OA = outcome assessor; APC = a priori power calculation; hr = hour; wk = week; mo = month; yr = year.

of these trials enrolled a general unselected postpartum population without previously identified risk (unselected postpartum women) (19,25,26); 4 enrolled only primiparous women (10,23,24,27); and 1 targeted women at high risk for family dysfunction or abuse (8).

Parenting knowledge, attitudes, and skills were assessed using a variety of measurement instruments. In the 3 trials involving unselected postpartum women, early provider hospital visits combined with 24-hour telephone access after discharge (19), a single public health visit within 21 days of delivery (26), and extended hospital and home contacts (25) had no impact on infant care knowledge (assessed by responses to a self-administered questionnaire) or attitude (assessed by an attachment inventory and child abuse and neglect reports). In primiparous women, no improved parenting outcomes resulted from a public health nurse telephone call made at 1 to 2 weeks post discharge, home visits by a public health nurse, or a single midwifery home visit (10,24,27) compared with controls. In contrast, in low-income primiparous women in North Carolina, United States, frequent educational visits to a pediatrician (at weeks 2, 4, 8, 15, 21, and 27) showed statistically significant improvements in maternal parenting skills (interaction, cooperation, appropriateness of play, and sensitivity) (23). In addition, in women at high risk for family dysfunction and child abuse, 6 weekly nurse home visits and case conferencing by a pediatrician and social worker did produce a statistically significant improvement in both home environment quality using the HOME inventory (Home Observation for Measurement of the Environment), which assesses quality of maternal interaction skills), and parenting stress using the self-reported Parenting Stress Index (8).

Clinical question: Are there any interventions that are effective at enhancing maternal mental health, quality of life, or physical health in the postpartum period?

Evidence: Fifteen of the 22 studies had maternal mental health, quality of life, and/or physical health as an outcome (8–20,28,29). Thirteen of 15 studies that addressed mental health used a validated measure of depression or anxiety, such as the Edinburgh Postnatal Depression Scale (8–10,13,16–18,28,29) or the Centre for Epidemiological Study of Depression Scale (CES-D), as an outcome measure (8,11,15,19). One study measured anxiety and used the State-Trait Anxiety Inventory (12). Five of 7 studies that examined maternal quality of life used the mental and physical health components of the SF-36 score (13,16,17,18,28). The remaining 2 studies used no validated measures of quality of life (14,20). Fourteen of 15 trials enrolled women with an uncomplicated

vaginal birth, and 1 enrolled women who had operative deliveries (28). Three trials included only postpartum primiparous women (10,14,18), and 2 trials included only women at high risk of family dysfunction and/or postpartum depression (8,9).

In the 15 studies, a variety of postpartum interventions were examined, including a self-help manual and support group invitation, telephone support from a public health nurse, early hospital visits from a health provider combined with 24-hour telephone access for a month, early contact with a physician (1 week as opposed to 6 weeks), a single pre-discharge midwife debriefing session, and home support by trained postnatal support workers, midwives, or registered nurses. Additional patient characteristics and intervention details of these studies can be found in Table 1.

In the 10 trials that enrolled an unselected population, only 1 study reported a statistically significant benefit from postpartum supportive strategies on depression, anxiety, or quality of life scores (16). In this study, provision of support was based on a detailed needs assessment administered by midwives in Birmingham, United Kingdom, at the first home visit, thus effectively selecting for a higher risk group. This trial showed significant quality-of-life improvements in the mental health component of SF-36 (difference in mean scores 2.96, 95% CI 1.16 to 4.77, $p = 0.002$) and a reduction in the number of women with an Edinburgh Postnatal Depression Scale score of ≥ 13 (21.25 vs 14.39%, 95% CI -11.99 to -1.71, $p = 0.010$) (16). An Edinburgh Postnatal Depression Scale score of greater than 12 has been shown to predict depressive illness reliably (31). A difference of 2 to 3 points on the SF-36 scale is believed to be clinically significant (16).

Two trials explicitly selected women with specific risk factors. In the first study, women in Queensland, Australia, who were identified as being at risk for family dysfunction or abuse, received nurse home visits weekly for 6 weeks, in addition to case conferencing with a pediatrician and social worker (8). A statistically significant reduction in women with an Edinburgh Postnatal Depression Scale score greater than 12 was seen in primiparous patients only (difference 5.8% vs 20.7%, $p = 0.003$). In the second study, in Vancouver, Canada, peer support was provided to women identified as being at high risk for postpartum depression (9). Fewer women in the intervention group had Edinburgh Postnatal Depression Scale scores greater than 12 at 8 weeks (15.0% vs 52.4%, OR 6.23, 95% CI 1.40 to 27.84, $p = 0.01$).

Only 4 trials evaluated interventions with maternal physical health as an outcome. The Birmingham, United Kingdom, study of midwife home support also

reported scores on the physical health component of the SF-36, and found no difference between the intervention and control groups (16). Two trials specifically evaluated the impact of an educational program on reducing unplanned pregnancies in unmarried, primiparous teen mothers (21,22). In Pennsylvania, United States, specific teaching by pediatricians, social workers, and nurse practitioners to African-American teens held in a clinic setting significantly reduced the number of repeat unplanned pregnancies (12.0% vs 28.3%, $p = 0.003$). (21) Similarly, in Australia, teaching by nurse-midwives during home visits (6 visits in 6 months) to teenage mothers increased effective contraceptive use (RR 1.35, 95% CI 1.09 to 1.68, $p = 0.007$) (22).

The only other trial that used maternal physical health as an outcome in Dublin, Ireland, provided trained community support worker visits to primiparous postpartum women. They reported improvements in fatigue, "feeling miserable," and wanting to stay indoors (14). This study did not use a validated measure of mental health, physical health, or quality of life.

Clinical question: Which type of support results in improved maternal satisfaction with care?

Evidence: Four trials measured maternal satisfaction with postpartum support as an outcome measure (8,11,12,15). Nurse home visitation was compared in all trials with either clinic or hospital visits. Maternal satisfaction was higher in all intervention groups that included enhanced home visiting, as were the costs associated with these programs. Only the trial that targeted women at high risk for family dysfunction or abuse showed significant benefits beyond maternal satisfaction (8).

Discussion and Conclusions

The universal provision of any postpartum support program to unselected low-risk women does not appear to alter any of the maternal outcomes examined significantly, despite the plethora of postpartum support interventions that have been examined. No evidence of effectiveness has been found with respect to maternal knowledge, attitudes, and skills related to parenting, maternal mental health, maternal quality of life, or maternal physical health in this population. In selected women, with previously identified risk factors, postpartum support programs show some promising results. Low-income primiparous women and those at high risk for family dysfunction showed improvements in parenting knowledge, confidence, or infant-child interaction with either nursing visits

and case conferencing or frequent educational visits to a pediatrician. Whether these improvements translate into a reduced incidence of child abuse or neglect remains to be determined. The only study that examined these latter outcomes was conducted in low-risk women, and showed no benefits from extended hospital and home contact.

A similar pattern was seen in the studies that examined maternal mental health. When women at high risk for postpartum depression or family dysfunction were targeted for intervention, either nurse visits combined with case conferencing or a less intensive peer support program improved maternal mental health outcomes. Although one study did not select women with risk factors at the outset, when support was based on a detailed needs assessment, effectively identifying a higher risk group of women, statistically significant improvements in both postpartum depression and quality of life were seen.

It is difficult to evaluate the impact of postpartum support on mental health in primiparous women. They were only specifically targeted in one trial that reported this outcome, and that showed no impact on Edinburgh Postnatal Depression Scale scores from a single public health telephone call. Only high-risk primiparous women benefited from a program of nurse home visitation and case conferencing.

Similarly, the reduced pregnancy rates in young, unmarried, primiparous patients are consistent with our findings that targeted psychosocially high-risk women may benefit from postpartum support programs administered by pediatricians or nurses.

Given that only one other randomized controlled trial addressed maternal physical health, no conclusions can be drawn about the impact of postpartum support on this outcome.

As expected, both maternal satisfaction and costs were higher with home visitation programs. With the exception of the one trial involving women at high risk for family dysfunction, this increased satisfaction and costs did not translate into additional improved outcomes.

The trials in selected populations who are at risk have several limitations. The generalizability of these studies could be strengthened by repeating them in different geographical settings and by comparing other support approaches. Many of the parenting studies examined only parenting knowledge and confidence. They could be strengthened by using more definitive outcome measures, such as maternal infant interaction and child abuse and neglect. Finally, the labor-intensive nature of these interventions may be difficult and costly to reproduce in many communities.

This review has several limitations. The exclusion of nonrandomized studies and studies conducted outside

of North America and other developed countries limits the generalizability of our study and narrows its scope. Based on this review, we cannot conclude that universal postpartum support has no benefits. Since postpartum support is also recommended to improve infant outcomes, the final conclusion with respect to the overall effectiveness of postpartum support will require inclusion of such literature in subsequent reviews. There may be some infant benefits, including improved breastfeeding duration, which will be reviewed in conjunction with other breastfeeding studies.

Randomized controlled trials are limited in that they focus on predetermined measurable outcomes. Qualitative literature and nonrandomized controlled trial literature may add significant insights into the benefits of postpartum support. In addition, many of the interventions were of low intensity (e.g., a single telephone call or visit). A recent systematic review concluded that only intensive support from a health professional reduced postpartum depression (32). Postpartum support programs must be implemented in an appropriate cultural context, and thus the applicability of this review is limited to developed countries. Because we also excluded studies that reported only health services utilization without clinical outcomes, this area needs to be explored further.

In conclusion, at this time, no randomized controlled trial evidence is available to endorse universal provision of postpartum support to improve parenting, maternal mental health, maternal quality of life, or maternal physical health. Some evidence exists that selected high-risk populations may benefit from postpartum support. In these groups, home visitation may improve parent-infant interaction, whereas both high-intensity home visits and less intensive peer support appear to be effective for maternal mental health. Contraceptive teaching from health professionals in both the clinic and home setting seems to be effective at reducing repeat pregnancies in teenage mothers. Communities need to consider targeting specific populations at risk when allocating resources in an attempt to improve these outcomes.

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