Support during pregnancy for women at increased risk of low birth weight babies

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Despite comprehensive and intensive social support over a significant length of time during pregnancy, a statistically significant reduction in the incidence of low birth weight, prematurity or perinatal mortality was not achieved.

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1. INTRODUCTION

Low birth weight (LBW), defined as weight less than 2500 g, results from intrauterine growth retardation and prematurity (birth at less than 37 weeks of gestational age). LBW is a major public health problem in under-resourced settings, where it increases the risk of child morbidity, mortality and disability, and represents significant costs for families, communities and health systems (1, 2, 3).

There is a strong relationship between the mother's social status (being socially disadvantaged) and having a LBW baby (4). Although there is no definitive evidence on the causal pathways between specific social disadvantages and giving birth to a LBW baby, chronic malnutrition, poor health-seeking behaviours, unhealthy life styles, increased risk of infection and stress are believed to be important determinants of LBW. Provision of social support to pregnant women has been proposed as an intervention to reduce the incidence of LBW. In this context, social support is defined as advice and counselling (on health-related behaviours, such as nutrition, rest, stress management, alcohol and recreational drug use), tangible help (e.g. provision of transportation for clinical appointments and household help) and emotional support. The underlying hypothesis is that social support has a mediating effect on the relationship between life stress from a range of causes and poor pregnancy outcomes such as LBW. This Cochrane review aimed primarily to assess the effects of provision of additional social support (compared with routine care) to pregnant women at high risk for giving birth to LBW babies. The secondary objective was to determine whether the effectiveness of social support varies by the timing of onset of the intervention (i.e. stage of pregnancy) and type of provider.

2. METHODS OF THE REVIEW

The authors searched (without any language restrictions) the Cochrane Pregnancy and Childbirth Group’s Trial Registry for randomized controlled trials (RCT) to identify studies that compared the effects of routine
care with additional support to pregnant women at high risk of delivering a LBW baby. Social support could have been provided by either a professional (social worker, midwife or nurse), a team that included trained lay persons, or a lay person alone. Additional (or social) support was defined as described above (section 1) and provided during home visits, clinic appointments, and/or by telephone. Trials were excluded from the review when the intervention was only educational or very brief, and did not continue until the birth of the baby. Smoking cessation programmes were also excluded.

The primary outcomes included: caesarean section for the mother and gestational age less than 37 weeks, birth weight below 2500 g, and stillbirth/neonatal death for the baby. The secondary outcomes for the mother were antenatal hospital admissions, post-natal hospitalization, depression and satisfaction with antenatal care. For the baby, the secondary outcome was long-term morbidity.

The authors reviewed all trials that met the inclusion criteria and pre-established quality standards. Two of the review authors evaluated the trials’ methodological quality and all data were entered twice to ensure accuracy. Special attention was paid to any possible sources of bias. Statistical analysis was conducted with the Review Manager software 2008, and studies with missing values above 20% were excluded.

### 3. RESULTS OF THE REVIEW

Seventeen trials (with 12 264 women) met the inclusion criteria. Definitions of risk of having a LBW baby varied across the included studies. Trials were conducted in developed countries (Australia, France, the United Kingdom and USA) as well as in low- and middle-income settings (Latin America and South Africa). The definition of “additional (or social) support” was relatively consistent across trials. In 16 studies, healthcare professionals had provided social support and in one study it was provided by a multidisciplinary team including trained lay women. Compliance rates were high in eight studies that had provided this type of information. The review authors considered the risk of bias acceptable in all studies.

Social support during pregnancy provided to women at high risk of having a LBW baby did not reduce the number of preterm [11 trials; 10 429; risk ratio (RR) 0.92, 95% confidence interval (CI) 0.83–1.01] or LBW newborns (11 trials; 8681; RR 0.92, 95% CI 0.83–1.03). Also, there was no reduction in perinatal mortality (11 trials; 7522; RR 0.96, 95% CI 0.74–1.26). Social support, however, did reduce the risk of caesarean sections (nine trials; 4522; RR 0.87, 95% CI 0.78–0.97) and antenatal hospital admissions (three trials; 737; RR 0.79, 95% CI 0.68–0.92). On the other hand, social support was associated with a significant increase in the likelihood of termination of pregnancy (five trials; 5587; RR 2.87, 95% CI 1.42–5.78). Maternal satisfaction with antenatal care was not affected by the intervention.

### 4. DISCUSSION

In most trials, social support was comprehensive and intensive and was started, on average, around mid-pregnancy (i.e. the intervention was implemented for a significant period of time during pregnancy.) However, in spite of its long duration and strong rationale for potential benefits, social support as an intervention did not achieve a statistically significant effect in terms of reduced incidence of LBW, prematurity or perinatal mortality. Two hypotheses can explain this lack of effect: (i) the intervention was not powerful enough to counter-balance the daily stressors that prevailed in the participating women’s lives; and/or (ii) the studies failed to identify women at true high risk of having LBW babies and, consequently, an undetermined but probably large number of low-risk women were included in the studies.

The increased likelihood of termination of pregnancy among women who received social support is an important effect of the intervention. This finding probably means that women who get timely and clear information about their options in a supportive environment are better prepared to make informed decisions about their own welfare. This result is particularly relevant in settings where abortion is highly stigmatized.
4.1. Applicability of the results

The findings of this review apply to all settings. While all women in all settings are entitled to a caring environment during pregnancy, health systems in developing countries should not contemplate social support as an intervention to reduce LBW resulting either from intrauterine growth retardation or prematurity.

4.2. Implementation of the intervention

All pregnant women should receive the support they need during pregnancy. Hence, health-care workers should continue to encourage families and community networks to support them.

This review found that caesarean section rates are lower and pregnancy terminations higher among those who receive social support. Both these findings imply lower health risks for mothers. In Latin America and other middle-income settings with a high rate of unnecessary caesarean sections, women and providers should be informed about the marginal but positive effect that social support during pregnancy has on the reduction of the procedure. In those settings, the high caesarean section rates are a result of complex interactions between several components of the local health systems and the consumers. Social support may be too complex and expensive implement as a specific intervention to reduce caesarean sections, whereas support during labour (e.g. by dulas or family members) could be explored as a more specific intervention. Policy-makers responsible for social welfare schemes for disadvantaged population groups can use these findings as a further justification for intensifying elements of their programmes that are especially aimed at pregnant women.

4.3. Implications for research

This review suggests that there is no need to conduct any new studies on the effects of social support during pregnancy to reduce LBW incidence. There are, however, some related areas that would benefit from further research, such as:

- effect of social support on interventions during delivery, such as caesarean section, and the mechanisms responsible for this effect;
- design and evaluation of other interventions to reduce unnecessary procedures during labour and delivery;
- effect of social support on women’s ability to make informed decisions about termination of pregnancy and other reproductive health issues;
- study of the causes of prematurity and identification of effective interventions to reduce this condition; and
- qualitative studies to understand better the psychosocial needs of vulnerable women in under-resourced settings.

References
