Randomized controlled trial investigating the effects of a breastfeeding relaxation intervention on maternal psychological state, breast milk outcomes and infant behavior and growth

ABSTRACT

Background: Biological signaling and communication between mothers and infants during breastfeeding may shape infant behavior and feeding. This signaling is complex and little explored in humans, although it is potentially relevant for initiatives to improve breastfeeding rates. Objectives: The aim of this study was to investigate physiological and psychological aspects of mother-infant signaling during breastfeeding experimentally, testing the effects of a relaxation intervention on maternal psychological state, breast milk intake, milk cortisol levels, and infant behavior and growth. Methods: Primiparous breastfeeding mothers and full-term infants were randomly assigned to receive relaxation therapy [intervention relaxation group; n = 33 (RG)] or to the control group [n = 31 (CG); no relaxation therapy] at 2 wk postpartum. Both groups received standard breastfeeding support. Home visits were conducted at 2 (HV1), 6 (HV2), 12 (HV3) and 14 (HV4) wk to measure maternal stress and anxiety, breast milk intake and milk cortisol, and infant behavior and growth. Results: RG mothers had lower stress scores postintervention than the CG (HV3 Δ = -3.13; 95% CI: -5.9, -0.3) and lower hindmilk cortisol at HV1 (Δ = -44.5%; 95% CI: -76.1%, -12.9%) but not at HV2. RG infants had longer sleep duration (Δ = 82 min/d; 95% CI: 16, 149 min/d) at HV2 and higher gains in weight and body mass index standardized deviation score than the CG infants (Δ = 0.76; 95% CI: 0.3, 1.22; and Δ = 0.59; 95% CI: 0.09, 1.1, respectively). RG infants had a mean milk intake at HV3 that was 227 g/d higher than that of the CG infants (P = 0.031) after controlling for gender and milk intake at HV1. Conclusions: The trial shows the effectiveness of a simple relaxation intervention for improving maternal and infant outcomes and identifies some potential signaling mechanisms for investigation in future and larger studies, especially in settings where mothers are more stressed, such as those with preterm or low birth weight infants. This trial was registered at clinicaltrials.gov as NCT01971216.

Keyword: Lactation; Milk intake; Milk cortisol; Maternal stress; Infant weight; Parent–offspring signalling