

Clin-IQ Project

Clinical Question: Does prolonged (one year or more) breast feeding result in adverse behavioral outcomes compared to bottle fed children?

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Answer: No

Level of Evidence for the Answer: B

Search terms: prolonged breastfeeding, exclusive breastfeeding, breastfeeding related adverse effects, behavior effects, mental health, bottle fed infants, attachment parenting, duration of breastfeeding

Date Search was Conducted: 2/22/13

Inclusion and Exclusion Criteria:

Inclusion Criteria: Published studies comparing effects of breastfeeding in infancy in humans on behavior and mental health

Exclusion Criteria: Other effects of breastfeeding were not considered

Summary of the Issues:

It is a well established that breastfeeding for the first two years of life promotes infant health¹. American Academy of Pediatrics recommends that mothers breastfeed exclusively for the first 6 months of life, with continued breastfeeding for at least the first year of life². World Health Organization and United Nations Children's Fund further recommend that breastfeeding be continued for up to two years as it shows reduction in mortality from infectious diseases. Despite the acceptance of this data, a recent report published by Save the Children ranked the US last out of 36 industrialized countries which support breastfeeding. A lack of paid maternity

leave and the prevalence of infant formula in maternity wards were cited to have contributed to the low ranking. Other studies², have also shown that mothers may discontinue breastfeeding earlier because of the social climate surrounding breastfeeding in the US. This is characterized by concerns of crossing the boundaries of appropriate public behavior by breastfeeding older infants. This social reaction was also exemplified by the controversy featured in the May 2012 edition of Time magazine on Attachment Parenting and the cover showing a mother breastfeeding her 3 year old child. Attachment parenting refers to parenting practices introduced by Pediatrician William Sears which focus on close physical proximity between mother and newborns and centers around breastfeeding which is argued to promote secure parent-child attachment, necessary for positive child mental health³. The purpose of this paper was to see if there was any evidence showing adverse effects associated with prolonged breastfeeding that may discourage mothers to continue breastfeeding for the recommended duration of 2 years and if prolonged breastfeeding alone contributes to positive mental health.

Summary of the Evidence:

Promotion of Breastfeeding Intervention Trial (PROBIT) was reviewed. This study was a cluster-randomized trial of a breastfeeding promotion intervention based on the World Health Organization (WHO) and United Nations Children's Fund (UNICEF) Baby-Friendly Hospital Initiative.⁴ The purpose of the trial was to evaluate the effect of extended breastfeeding on child behavior and maternal adjustment. A total of 17,046 healthy breastfed infants from 31 maternity hospitals/clinics were enrolled. All were born at term in 1996–1997, weighed at least 2,500 g, and were enrolled during their postpartum stay.

At the age of 6.5 years, children (accompanied by a parent, usually [92%] the mother) attended a special study interview and examination held at the pediatric outpatient clinic between

December 2002 and April 2005. A total of 13,889 children were seen in follow-up representing 81.5% of the 17,046 originally randomly assigned children. Of the 3,157 (17,046–13,889) children who were enrolled but not followed up, 88 had died, 2,938 were lost to follow-up, and 131 were unable/unwilling to come for their PROBIT II visit. The parent who accompanied the child to the clinic for the 6.5-year follow-up visit consented in writing to the examination and testing procedures at that visit. The parent completed the Strengths and Difficulties Questionnaire (SDQ), parent version. The SDQ is a brief scale devised for behavioral screening of children aged 3 to 16 years. The scale contains 25 items, some positive and others negative. The 25 items are divided into 5 scales of 5 items each, which generate scores for conduct problems, hyperactivity/inattention, emotional symptoms, peer problems, and prosocial behavior. In addition, as part of the SDQ impact supplement, both the parent and the teacher were asked a global question about whether the child has difficulties in any of the following areas: emotion, concentration, behavior, or being able to get along with other people. These results are shown in Figure 1. The control groups matched very closely to the experimental breastfed groups in each of these tested areas.

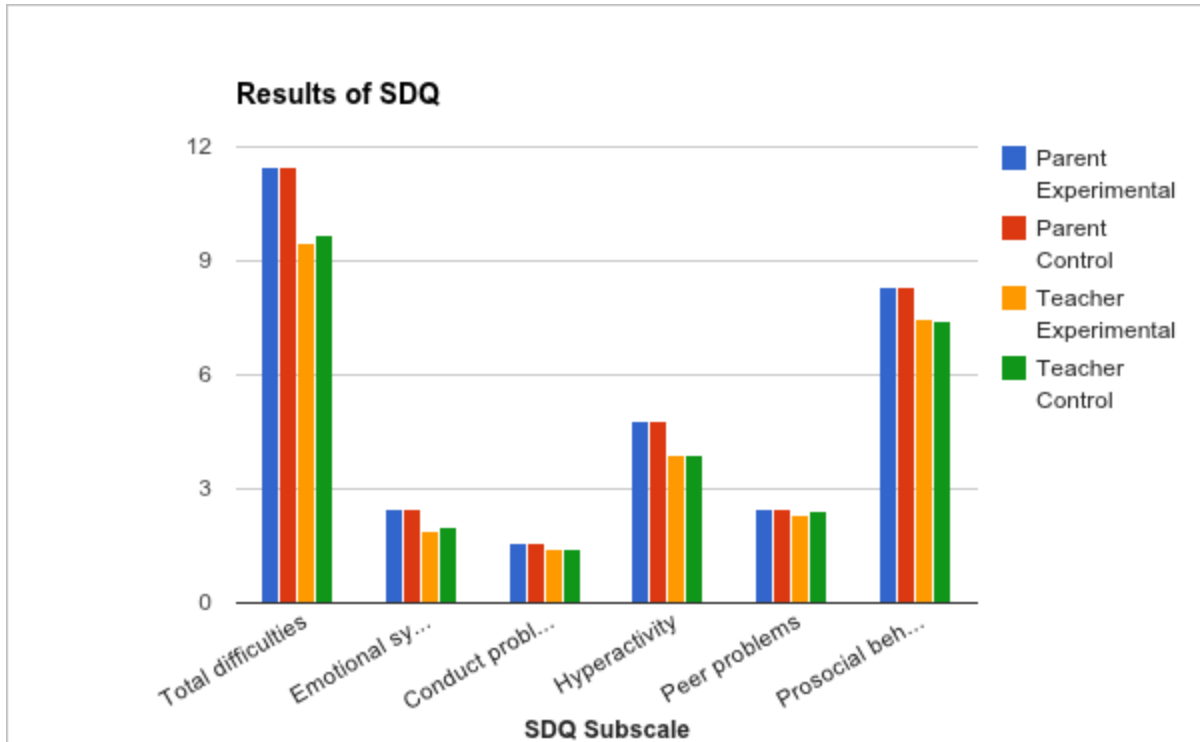


Figure 1 SDQ SUBSCALE: There was no difference in conduct problems, hyperactivity/inattention, emotional symptoms, peer problems, or prosocial behavior in the experimental breastfed group versus the control bottle fed group.

As a continuation of this study other demographics which included birthweight, child's sex, maternal and paternal education, upbringing in rural versus urban setting, were later added and compared with the experimental group. The study concluded that there were no differences in behavioral outcomes of children who were breastfed compared to those bottlefed. There were however limitations to the studies that were later recognized which may offset the results namely due to residual confounding by differences in the psychological attributes and interactional styles of mothers who breastfed vs. those who formula fed.

Another study reviewed, a large prospective birth cohort study, was conducted in

Western Australia and published in 2009. In this study 2,900 pregnant women were recruited and then followed for 14 years. Mothers were asked to complete a Child Behavioral checklist (CBCL) and the mental health status was assessed at 2,6,8,10 and 14 years. This study concluded that shorter duration of breastfeeding may be a predictor of adverse mental health through childhood and adolescence.

Conclusion:

Based on the studies reviewed there appear to be no adverse effects on mental health associated with extended breastfeeding. Breastfeeding itself is an intimate act and it is surprising that not much has been established in terms of its effects on mental health⁴. There is some indirect evidence of positive effects on conduct, but more research needs to be done. Regardless, all mothers should be encouraged to breastfeed² for as long as feasible for the numerous beneficial health effects already known with no concern for any adverse effects on their infants' behavior.

Reference List:

1. Scharfe E. Maternal Attachment Representations and Initiation and Duration of Breastfeeding. *J Hum Lact* 2012 May;28(2):218-25. doi: 10.1177/0890334411429111. Epub 2012 Jan 17.
2. Stearns CA. Cautionary Tales About Extended Breastfeeding and Weaning, *Health care for Women International*,2011 32:6, 538-554
3. Curtner-Smith ME, Middlemiss W, Green K, Murray AD, Barone M, et al. An Elaboration on the Distinction Between Controversial Parenting and Therapeutic Practices Versus Developmentally Appropriate Attachment Parenting: A Comment on the APSAC Task Force Report *Child Maltreat* November 2006 11: 373-374

4. Kramer MS, Fombonne E, Igumnov S, Vanilovich I, Matush L, Mironova E, Bogdanovich N, Tremblay RE, Chalmers B, Zhang X, Platt RW., For The Promotion of Breastfeeding Intervention Trial (PROBIT) Study Group Effects of prolonged and exclusive breastfeeding on child behavior and maternal adjustment: evidence from a large, randomized trial. *Pediatrics*. 2008;121(3):e435–e440. doi: 10.1542/peds.2007-1248.