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Cochrane Review Summary: Massage for promoting mental and physical health in typically developing infants under the age of six months

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Key words: infant; massage; mental health; physical health

Review question

Is infant massage effective in promoting infant physical and mental health in a healthy population aged under six months?

Relevance to primary care and nursing

Primary health care professionals provide specialist services to improve outcomes for parents and babies. Government guidance reports highlight the importance of emotional well-being and mother–child relationship in early years and recommend health visiting and midwifery pathways to meet the physical, mental health and well-being needs of parents and babies.

Characteristics of the evidence

This Cochrane review contained 34 randomised controlled trials and quasi-randomised studies, which included 3984 participants who were healthy, full-term babies aged six months or younger. Studies targeting pre-term and low birth weight babies in a hospital setting were excluded. Interventions needed to evaluate infant massage defined as ‘systematic tactile stimulation by human hands’, which was specifically taught to parents and/or staff, and/or used as a routine cultural practice, and compared with controls that received no

active massage. They were delivered in hospitals, community centres, a school, orphanage and a day care centre; although in 13 studies, it was unclear. Studies were conducted in the United Kingdom (two), United States of America (seven, one included Canada) and China (20), and five in Korea, Israel, India, Iran and Turkey, respectively. They were delivered by researchers, a trained parent, nurse or other medical professionals. Interventions were tactile stimulation only or multimodal (more than one method of stimulation) and varied in type of massage, duration and frequency. Studies needed to have used a standardised outcome measure of infant mental or physical development, which was measured immediately post-intervention and/or between six and 12 months follow-up.

Summary of key evidence

In all, 20 of the 34 included trials were rated as at high risk of bias (low quality). Primary outcomes included physical health and growth (e.g., various body measurements), illness, service use, hormones, behavioural states (eg, sleep), formula intake and mental health (eg, infant temperament, attachment, behaviour, parent–infant interaction and development). Interventions were categorised as brief (a single session), short-term (≤ 4 weeks), medium-term (from 4 to 12 weeks) and long-term (from 12 to 26 weeks). Meta-analysis was conducted, where appropriate, and overall there was considerable heterogeneity (mean difference MD and standardised mean difference SMD) and 95% confidence intervals (CI) are shown in parentheses).

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Massage versus control: physical and growth outcomes

Meta-analyses of 14 physical outcomes overall showed a significant treatment effect for most physical outcomes at post-intervention (weight, length, head, arm, leg circumference, 24-h sleep duration, time in crying/fussing, reduced blood bilirubin and diarrhoea), which was lost when studies at high risk of bias were removed (sensitivity analyses). There were no significant effects for cortisol, duration of night sleep, sleep length over 24 h, upper respiratory infection or anaemia. Sensitivity analyses for weight length and head circumference showed a significant effect only for length (three studies, $n = 405$; MD -0.65 cm; 95% CI: -1.20 to -0.1). At six months, a significant treatment effect was reported from studies conducted in Eastern countries, on weight (three studies, $n = 202$; MD -758.29 g; 95% CI: -1364.67 to -151.90), which remained after sensitivity analyses, and head (two studies, $n = 173$; MD -2.19 cm; 95% CI: -3.88 to -0.49), but not length.

Mental health and development

Meta-analysis of 18 mental health outcomes showed a significant effect at post-intervention (two studies, $n = 237$) for gross motor skills (SMD -0.44 ; 95% CI: -0.70 to -0.18), fine motor skills (SMD -0.61 ; 95% CI: -0.87 to -0.35) and social behaviour (SMD -0.90 ; 95% CI: -1.61 to -0.18); but not for language development, and the studies were rated as high risk of bias. Four studies ($n = 466$) showed a significant effect on psychomotor development (SMD -0.35 ; 95% CI: -0.54 to -0.15), which was lost after sensitivity analysis and at follow-up. Only one study ($n = 180$) reported a positive effect on adaptive behaviour, fine motor, language and social behaviour, but not on gross motor domain at follow-up. No significant differences were found for a range of aspects of infant temperament, parent–infant interaction and mental development. Only parent–infant interaction was available at follow-up, but the effect was not significant.

Overall, sensitivity analyses showed that the significant intervention effects on both physical and mental/developmental outcomes were lost once high risk of bias studies and those that were conducted in the East were excluded from analysis

and at six months follow-up. The duration of interventions did not affect the findings.

Implications for practice

The evidence from this review is of poor quality and does not support the use of infant massage in healthy populations for whom appropriate outcome measures are required.

Implications for research

High quality studies are required to evaluate the impact of infant massage in higher-risk groups (eg, demographically and socially deprived parent–infant dyads), where there may be more potential for change.

Evaluations of appropriately focused infant massage interventions examining parent–infant interactions are needed. Research should consider routine delivery of interventions by primary care givers for an extended period of time and the mode of delivery appropriate to the needs of the participants. Studies need to consider appropriate biologically plausible outcomes and mechanisms for change, as well as long-term follow-up.

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Conflicts of Interest

None.

Reference

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