Chiropractic and breastfeeding dysfunction: A literature review

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ABSTRACT

Objective: Breastfeeding an infant has many long and short-term health benefits. Chiropractic care, as part of a multidisciplinary team, has the potential to assist with biomechanical causes of breastfeeding dysfunction. The purpose of this study was to review the literature and explore what evidence there is to support this theory. **Methods**: Database searches were performed (PubMed, MEDLINE, Cumulative Index to Nursing and Allied Health and Index to Chiropractic Literature) and hand searches to identify relevant studies. Inclusion criteria were: written in the English language in a peer-reviewed journal, involving infant human participants and a focus on chiropractic treatment for breastfeeding (dysfunction). **Results**: Eleven articles were reviewed; 6 case studies, 3 case series, 1 clinical trial and 1 narrative. **Conclusions:** Limited evidence exists to support chiropractic treatment for infants with breastfeeding dysfunction. Of the 6 case studies, 3 case series and 1 clinical trial found in this report there was a trend towards resolution of breastfeeding issues with chiropractic treatment of biomechanical imbalances. More meticulous, higher evidence studies are needed to provide further evidence of this.

Key words: breastfeeding, chiropractic, infant, spinal manipulation.

Introduction

Breastfeeding, particularly exclusively for the first 6 months, has been associated with numerous beneficial short and long term health outcomes for an infant.[1,2] Breast milk has been shown to contain secretory IgA antibodies, lactoferrin, oligosaccharides, numerous cytokines and growth factors which all aid in an infant's immune response.[3,4] Purported short term benefits to the infant are a decreased risk of many childhood illnesses.[5] Incidence of gastro-intestinal infections, otitis media, other respiratory tract infections and asthma, even in those with a strong family history, may be decreased in infants who are breastfed.[6,7]

The benefits of breast milk extend into later life with extensive literature to support a decreased incidence of type 2 diabetes and obesity in older children and adults who were breast fed as infants.[6, 8-11] This effect appears to be time dependent; the longer breastfed, the more reduced the likelihood of disproportionate weight later in life.[11,12] The World Health Organization, as well as many other leading authorities, recommend exclusive breastfeeding until the age of 6 months, at which time timely solids can be introduced (with complimentary breastfeeds to at least 12 months).[13]

In Australia, 92% of women are initiating breastfeeding at birth, yet only 56% are exclusively breastfeeding at 3 months and only 14% at 6 months.[14] Reasons for breastfeeding cessation are numerous and include environmental and socioeconomic factors.[15] Others are infant/mother related and include sore nipples, inadequate milk supply, infant having difficulties feeding and a perception that infant wasn't satiated.[16-18]

The mechanics of breastfeeding from an infant perspective are well documented in the literature.[19-21] Amongst other factors successful breastfeeding relies on a series of complex movements facilitated by the craniofacial musculoskeletal anatomy.[20, 21] Imbalances or asymmetries in this delicate system have the potential to alter an infant's suck and could possibly lead to nipple pain, breast engorgement, mastitis and insufficient milk supply.[22]

The purpose of this study was to investigate the available evidence to support the role chiropractic may play in treating breastfeeding dysfunction. At present there has not been a review of the literature to explore this.

Methods

Sources of information

Relevant studies were uncovered via the following electronic databases: PubMed, MEDLINE (ProQuest), Cumulative Index to Nursing and Allied Health (CINAHL) and Index to Chiropractic Literature (ICL). Databases were searched from inception through December 2013 using the search terms delineated below. A hand search of appropriate journals and the reference list of each relevant study was then performed to identify any suitable studies missed by the electronic searches.

Search terms and delimiting

Search keywords for all databases included: breastfeeding and the similar breast-feeding and breast feeding, chiropractic and spinal manipulation.

Selection criteria employed
All study designs were included and there was no restriction in terms of age of publication. Only articles published in the English language in a peer-reviewed journal, involving infant human participants and focused on chiropractic treatment for breastfeeding (dysfunction) were included.

Results
A literature search of PubMed using the above stated search terms returned 6 results, 4 of which were not relevant. Of the 2 included, 1 was a case series,[23] and the other a case study[24]. The MEDLINE search produced 7 results, only two of which were appropriate, both having been found previously in the PubMed search.[23, 24] The CINAHL search unearthed 7 findings, 4 of which were irrelevant to this study. The 3 found relevant were 2 case series[23, 25] and one case study.[26] Only one of the case series had turned up in the previous searches. The ICL search produced 14 results, 11 of which appeared relevant and 7 that hadn't been produced in previous searches. Of those 7, 4 were case studies,[27-30] one was a case series,[31] another was a clinical trial[32] and finally, a narrative on collaborative care.[33] One of these case studies was later not included as it appeared in a journal that was not peer reviewed.[30] A hand search of each relevant study was performed to identify only one article missed by the electronic investigation.[34] It too was later not included as it involved an infant with feeding problems assisted by chiropractic care who had only been bottle fed and never breastfed. Relevant journals were also hand searched, to reveal one, previously undiscovered narrative review and case report[35].

In summary a thorough literature search revealed only 5 case studies,[24, 26-29] 3 case series,[23, 25, 31] 1 clinical trial[32], 1 narrative[33] and 1 narrative review and case report[35] that fit the selection criteria of this study.

Discussion
There is a lack of literature available on the effects chiropractic care may have on breastfeeding dysfunction. That which is available comes from case studies, case series and one low level clinical trial all of which are based on clinical experiences or possibly anecdotal evidence. The findings of these studies have been summarized in Table 1.

All 5 case studies[24, 26-29] describe findings of biomechanical change to the upper cervical spine, specifically the atlas or atlantoccipital joint. Holleman[24] and Bernard[26] both described cranial restrictions and temperomandibular joint (TMJ) restriction and TMJ asymmetry in mandible with hypertonicity of TMJ musculature respectively. Bernard[26], Cuhel[29] and Willis[27] reported on infants who had difficulty or refused to feed form on particular breast. All cases accounted eventual improvement in infant's breastfeeding ability and resolution of breast side preference and biomechanical changes.

The narrative review and case report produced by Lavigne[35] explores the case of a 3-week-old neonate, presenting to a chiropractor with feeding difficulties due to biomechanical dysfunction of upper cervical spine, TMJ and cranial bones complicated by ankyloglossia (tongue-tie). Lavigne also performed a review to investigate the literature available surrounding alleviation of breastfeeding dysfunction following the frenotomy procedure. In this case a medically performed frenotomy along with conservative chiropractic treatment for the musculoskeletal imbalances saw a marked improvement in breastfeeding difficulties.

Hewitt's study[31] is titled 'a case series', but is however structured as a case report describing two separate cases. Case one denotes an 8-year-old child with cranial restrictions only and case two a 4-week-old male with cranial restrictions as well as biomechanical changes at C1/C2. Hewitt[31] reported complete resolution of symptoms after a period of chiropractic care.

A pilot case series was performed by Stewart[25], who administered a questionnaire to 19 breastfeeding mothers pre and post chiropractic care of their infant. Stewart attempted to correlate specific clinical findings (chiropractic subluxations) with specific infant feeding problems. The questionnaire covered the following components of breastfeeding behavior: attachment, extension/arching of infant, side shaking once attached, side preference and overall stress while feeding. Stewart reported a reduction in each category after chiropractic treatment.

Miller et.al.[23] produced a case series of 114 infants referred to a chiropractor by a medical practitioner for feeding difficulties. The most common clinical findings were posterior cervical joint restriction (88.7%), TMJ imbalance (35.7%) and inadequate suck reflex (34%). Intervention comprised of 2-5 treatments of chiropractic therapy over a 2 week period. The specific outcome desired was exclusive breastfeeding (which none of the infants were achieving prior to treatment). Miller[23] found that all infants showed some improvement with 78% being able to achieve exclusive breastfeeding at the end of the two weeks.

Vallone[32] performed a small clinical trial, comparing the craniofacial and spinal biomechanical characteristics of 25 infants demonstrating breastfeeding difficulty with those of 10 infants with no apparent breastfeeding issues. The 25 infants with breastfeeding difficulty demonstrated imbalanced musculoskeletal action as compared to the infants in the control group. Utilization of soft tissue therapies and chiropractic treatment to the spine and cranium resulted in

improved feeding in 80% of the affected infants.

Conclusion

Limited evidence exists to support chiropractic treatment for infants with breastfeeding dysfunction. Of the 6 case studies, 3 case series and 1 clinical trial found in this report there was a trend towards resolution of breastfeeding issues with chiropractic treatment of biomechanical imbalances. More studies are needed to provide further evidence of this.

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Table 1

Reference	Sample	Presenting Complaint	Findings & Diagnosis	Treatment	Other Complications	Results
Holleman et.al. 2011	8-day-old	Poor latch, quickly pulling away, weak./ poor vacuum + maternal nipple pain	d/c cervical ROM, d/c B abduction arms, d/c sacral extension S1- coccyx, d/c TMJ & CR movement Diagnosis: craniocervical syndrome	4 visits. gentle chiropractic manipulation/ toggle recoil technique to C1, TMJ & coccyx, fingertip pressure to CR,.	None	Post visit 1 — moderate improvement in suckling continuity Post visit 2 — latching on improved (letdown reflex not brisk) Post visit 3 — letdown reflex improved Post visit 4 — breastfeeding non problematic
Bernard et.al. 2012	6-day-old male	Irritable & distress when turning head to mothers L breast	Asymmetry in mandible, d/c L cervical rotation, i/c tension to mm anterior to L TMJ	1 visit Internal mm release L TMJ, Activator adjustment to L C1, cervical stair stepping, CR- occipital pump	Breast-feeding jaundice	Post visit 1 — baby drained L breast without distress. No further breast-feeding complications.
Sheader, 1999	15-day-old male	Inability to BF & colic since birth. Near constant crying, screaming, shaking, rash & vomiting during/after feeding. Excessive abdominal & bowel gas.	Infants legs drawn up, positive L reverse fencer	13 visits/11 treatments Chiropractic adjustment to C1 Chiropractic adjustments	Colic Hepatitis Vaccination	Post visit 1 — immediate reduction in crying, screaming & shaking. Vomiting & crying at feeds also ceased. Post visit 2 — BFing well Visit 3 — no treatment Return of all symptoms post Hepatitis vaccination Visit 4-12 — reduction of symptoms post adjustment Post Visit 13 — no recurrence of symptoms
Cuhel et.al. ,1997	12-day-old male	Difficulty feeding on R breast, short feeding times on R breast, excessive bowel gas	d/c occiput ROM, R atlas fixation in x-translation, positive R reverse fencer	Many Visits Infant toggle recoil adjustment to R C1 TP	Colic Depo-Provera contraceptive injection	Able to feed at R breast without difficulty immediately post initial treatment. Recurrence of symptoms intermittently over following months decreasing in severity over time. Decrease in symptoms after each treatment. Reoccurace thought to be due to Depo-Provera contraceptive injection post birth.
Willis, 2011	4 week old female	Refusing to feed on R breast since birth	d/c R cervical rotation C1 Left posterior subluxation	1 visit activator adjustment to C1 L TP		Able to feed at R breast immediately post treatment. i/c in R cervical rotation immediately post treatment no return of symptoms
Lavigne, 2012	3-week-old male	Maternal Nipple Pain	Restriction in manibular excursion. Cervical dysfunction at C1, CR dysfunction of parietal, frontal and temporal bones.	Unspecified	Tongue-tie	Decrease in Maternal nipple Pain and BF dysfunction following medically performed frenotomy and conservative chiropractic treatment.

CASE SERIES

Reference	Sample	Presenting Complaint	Findings & Diagnosis	Treatment	Results
Stewart, 2012	19 infants	19 breastfeeding mothers referred to chiropractor completed a survey. 14/19 reported attachment issues.	Each child assessed for chiropractic subluxation. A total of 44 were found (average 2.3 per patient). 81% of these were upper cervical and glenohumeral joint subluxations.	Treatment types not given Mothers filled out same survey at end of treatment program.	100% reported improved attachement to breast 94% reported d/c arching 88% reported d/c shaking 84% reported d/c feeding stress overall once attached 77% reported d/c feeding pain 64% reported d/c side preference
Miller et.al. , 2009	114 infants <12 weeks	Referred by medical practitioner for sub-optimal infant breastfeeding. Could not feed exclusively at breast.	Cervical posterior joint dysfunction (89%) TMJ imbalance (36%) Inadequate suck reflex (34%)	Chiropractic therapy in addition to any support given elsewhere.	All infants showed some improvement with 78% able to exclusively breastfeed after 2-5 treatments over a 2 week period.
Hewitt, 1999	2 infants 8-week-old female 4 week old male	8 week old unable to maintain suction since birth. Excessive regurgitation 4 week old unable to latch since birth	8 week old — weak suck reflex, CR imbalance 4 week old — mild mm spasm in R suboccipital region, d/c L rotation & R lateral flexionat C1/C2, CR imbalance	8 week old — cranial therapy 4 week old — modified diversified rotatory break maneuver & cranial therapy	8 week old — Post visit 1 — no excessive regurgitation, maintaining suction 75% of time. Post visit 2 — complete resolution of symptoms 4 week old — Post visit 1 — immediately able to latch effectively to B breasts.

CLINICAL TRIALS

Reference	Sample	Presenting Complaint	Findings & Diagnosis	Treatment	Results
Vallone, 2004	35 infants: 25 treatment, 10 control	Difficulty breastfeeding. Previously seen by LC, midwife, LLLL or physician.	Infants with BFing difficulty revealed imbalanced musculoskeletal action as compared to infants in control group	Manual therapies including; cranial therapy, Logan Basic, massage and gentle manual diversified chiropractic adjustments.	80% of infants showed improvement in feeding

d/c — decreased, B — bilateral, TMJ — temperomandibular joint, CR — cranial(s), L — left, i/c — increased, mm — muscle/musculature, BF — breastfeed, TP — transverse process, LC — lactation consultant, LLLL — La Leche League Leader,

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