An account of significant events influencing Australian breastfeeding practice over the last 40 years

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Abstract

This paper explores key modern historical events that are proposed to have significantly influenced Australian breastfeeding education and practice. The purpose was to track the increasing medicalisation of birth and its consequence for the professionalising and pathologising of breastfeeding. The method reviewed relevant literature from 1970 to 2010. The analysis identified key events that appear to have contributed to the decrease in Australian breastfeeding rates and the increase in women experiencing breastfeeding complications, particularly nipple pain and trauma. The authors demonstrate how breastfeeding, like birth, has changed from a ‘normal’ mammalian event to a process managed by experts. The authors conclude that current professional practice often disturbs and disrupts the mother-baby union and contributes to the complexities experienced by contemporary breastfeeding women.

Key words
Anatomy, bio-physiology, neuro-psychology, mammal, breastfeeding, birth.

Number of words
Excluding the Abstract, Table One, key words and References = 3,959
Introduction

The decline in Australian breastfeeding rates is a significant public health concern with large discrepancies between recommendations by the World Health Organisation (WHO) and the National Health and Medical Research Council (NHMRC) and documented rates in Australia.\(^{(1)}\) Breastfeeding initiation rates in Australia as high as 88% are not sustained with many women experiencing difficulty including pain and nipple trauma and only 18% are still breastfeeding at six months. Table One provides breastfeeding initiation and duration rates for six comparable countries.

The National Breastfeeding Strategy 2010 - 2015 proposes to revisit the WHO Code of Marketing of Breast-milk substitutes, provide support for breastfeeding in all settings, increase education, awareness, continuity of care, referral pathways and support networks in an effort to reverse the downward trend.\(^{(2)}\)

To date, most of the critique around decreasing breastfeeding rates internationally has focused on the marketing of breast milk substitutes, and the scientific approach to infant feeding and hygiene introduced in Australia in the early 20th century. This paper explores a number of other phenomena and events that the authors claim are contributing to the poor breastfeeding performance in Australia.

Table 1: Initiation and duration of breastfeeding rates for six countries 2001-2005

INSERT TABLE ONE HERE

Source: Compiled from a collection of published data: (a)\(^{(3,4)}\); (b)\(^{(5)}\); (c)\(^{(6)}\); (d)\(^{(7)}\); (e)\(^{(8)}\); (f)\(^{(9)}\).
Numerous interventions to increase initiation and sustain breastfeeding have been trialed in Australia and overseas. A Cochrane review of 34 studies from 14 countries by Britton et al (2007) reported evidence for continuation of exclusive breastfeeding being more effective with lay support and that combinations of lay and professional support were more effective than professional support alone, and face-to-face support was more effective than telephone advice.\(^{(10)}\) To date, with the exception of a few studies, \(^{(11-13}\) the multiple manipulative techniques used for teaching breastfeeding have largely been unquestioned. No research has explored the implications of modern techniques in relation to nipple trauma.

**Method**

A search strategy retrieved articles from a range of databases, including CINHAL, Medline, PubMed, Academic Search, and the Cochrane Database of Systematic Reviews. The parameter was set from 1970 to 2010, although a selection of texts from the 1940s to the late 1960s were also included. Additional material was sourced from libraries, electronic media, Google Scholar, the World Health Organisation (WHO) and the United Nations Children’s Fund (UNICEF) reports and research publications. The key words used in advanced search strategies included: labour, birth, drugs; breastfeeding, nipple pain and trauma; neonatal cranial, spinal and intra-oral anatomy; neuro-physiology, sensory smell, taste, touch, reflexes and instincts; mammalian behaviours and survival skills.

**Medical interventions in Birth**

The medicalisation of birth, a phenomenon commencing in the 1700s and described across a range of disciplines has increased with the institutionalisation of western maternity services.\(^{(14-16}\) More recently, Kieran O’Driscoll (1973) led a new obstetric era advocating a management regime that would decrease the length of labour, stating that every primigravid woman could be ‘delivered’ within 12 hours. The O’Driscoll regime activated and accelerated
the progress of normal labour by the surgical procedure of rupturing the forewaters followed by the intravenous infusion of the synthetic oxytocic drug, Syntocinon.\(^{(16,17)}\) This same active management regime soon applied to multigravid women. Obstetricians realised they could reduce overnight call-out and disruption to their consulting times by inducing these women in the morning, and most would be delivered by the evening. Around the same time a growing obstetric belief in placental malfunction increased fear of fetal risk past 40 weeks gestation. The diagnosis of ‘overdue’\(^{(18)}\) altered individual gestational parameters\(^{(19)}\) resulted in higher induction rates and introduced the modern phenomenon of ‘cascading’ intervention,\(^{(20,21)}\) that impacted on breastfeeding.

In Australia today the reported public hospital rates of induced labour range from 23% - 30%.\(^{(22)}\) A Cochrane Review (2006) concluded that induction of labour after 41 weeks or later, compared to awaiting spontaneous onset of labour at least one week is associated with fewer perinatal deaths. However, the same review reported that the absolute risk is extremely small and recommended that women should be appropriately informed on both the relative and absolute risks.\(^{(23)}\)

**Changed role of the midwife**

Since the 1970’s, the role of the midwife has responded to multiple practice changes. These include rising medical and surgical interventions, mechanised labour regimes alongside declining breastfeeding rates and the increasing use of infant formula.\(^{(24,25)}\) Influenced by these medical and social changes, midwives have modified a large component of their scope of practice to support obstetric practises.\(^{(26)}\) Medicalisation effectively altered the expert ‘with woman’ role of the midwife.\(^{(19)}\) In the revised role of technical assistant the midwife became responsible for overseeing the intrapartum acceleration of induced labour, to achieve the promise of a time limited 12 hour labour.\(^{(27)}\)
Medicalisation of normal labour and birth stimulated ongoing national and global debate that focused on the economics of increasing public health costs for obstetric procedures and non-essential medical interventions. In modern health reform very little debate has focused on “optimised psychophysiological wellbeing” or the woman’s ability and innate strength to complete her labour, birth and breastfeeding journey in her unique way with the guiding expertise of the autonomous midwife.

Continuous monitoring of labour

By the late 1970s aggressively marketed new technologies were introduced to birthing services. These included electronic fetal monitors equipped with transducers that attached to intra-uterine catheters. These closed circuit machines measured intra-uterine pressure via a long catheter inserted into the uterus at the time of induction. The catheter relayed intra-uterine pressure readings back through the system to a transducer automating the calculated administration of intravenous Syntocinon. Rapid technological growth in the 1980s moved to the use of intravenous infusion pumps that delivered digitally programmed preset rates of Syntocinon, replacing the closed circuit machinery.

The modified midwife presided over Syntocinon infusions managing the intravenous rate that synthetically increased an unnatural velocity of frequency, strength and duration of contractions. Technology continued to replace the constant “guardianship” of the midwife being with woman to observe and protect the undisturbed progress of labour. With the advent of electronic fetal monitoring, midwife auscultation skills diminished to the extent that some student midwives graduate without the skills of detecting variable fetal heart changes using an aural pinnards stethoscope.

As the use of electronic fetal monitoring increased, women attached to the machinery were confined to bed and felt restricted in their physical movement. They experienced
Positional awkwardness and were no longer able to achieve self determined, unrestricted labour when secured with legs in stirrups for birth. These confining factors amplified pain and that escalated the need for pharmacological pain relief.\(^{(31, 32)}\) Davis-Floyd (2000) succinctly expresses the consequences of techno-medical interventions that are no longer:

...reserved for the small percentage of births that actually need them; rather, they are performed on most laboring women. By interfering with the normal process of labor, such interventions often generate the very complications they are designed to prevent.\(^{[13], p.10}\).

**Obstetric opiates**

Concerns have been raised by midwives, and other health professionals, about the poorly studied effects of obstetric opiates on newborn feeding behaviour, commonly described as the ‘sleepy’, ‘lazy’ or ‘poor’ feeder.\(^{(34)}\) Torvaldsen (2006) conducted a prospective cohort study of 1,289 women administered epidural and general anaesthetic opioids. These women were significantly more likely to partially (rather than fully) breastfeed, experience difficulties in the first few days and cease breastfeeding in the first 24 postnatal weeks, than women using non-pharmacological methods for pain relief.\(^{(35)}\) The AIHW Report (2007) analgesia data, reported that of all women who laboured spontaneously or where labour was induced \(n=237,023\), 75% were administered analgesia, 25% had systemic opioids and 32% had regional analgesia.

A study by Gow (2001) raised concerns about the effects of obstetric analgesia on maternal-fetal and newborn hepatic (liver) metabolism, including the elimination effect of these drugs during breastfeeding. Gow also refers to a range of scientific research noting that dose-per-body-weight drug administration may be less harmful in adult physiology, but have different effects on the individual fetal and newborn hepatic physiology.\(^{(21, 36)}\)
Kumar (2003), identified newborn respiratory depression following maternal epidural analgesia combined with opioids and concluded that these neonates were more prone to respiratory sequelae in-utero and after birth.\(^{(37,38)}\) The same author reported that epidural opioids diffused freely from the epidural space into the maternal blood, crossed the placental barrier and impacted on the fetal and newborn immature central nervous system (CNS), resulting in slightly higher opioid concentrations deposited in fetal peripheral tissue.\(^{(37)}\)

**Birth trauma**

Birth trauma experienced by the mother or the baby significantly impacts on the first and early breastfeeds. Birth trauma is defined as a physical or psychological event involving “actual or threatened serious injury or death to the mother or her baby” during the maternity phase.\(^{(39), p.229}\) Potentially harmful practices such as birth interventions involving caesarean section, perineal incision, third and fourth degree tears, epidural or spinal anaesthetic and opiate analgesics continued to increase. In terms of the volume of medical intervention, scant consideration has been given to the consequences of psychosocial and physical exposure to mechanical birth trauma, particularly newborn cranio-facial and neck injuries that impact on early breastfeeding difficulties and subsequent breastfeeding duration.\(^{(28,40)}\)

Medical-surgical induction of labour and caesarean section continue to be common obstetric practice, with Australia having one of the highest caesarean section rates in the western world. The rate of caesarean section was 31% in 2007 \((n=89,371)\), a significant increase from 21% in 1998.\(^{(41)}\) In 2007, the national induction of labour rate was 25% of women who gave birth and 63% \((n=200,053)\) experienced some degree of perineal trauma ranging from first, second, third or fourth degree tear to episiotomy and episiotomy with extended tear.\(^{(41)}\)
Birth trauma associate with consequential physical pain or discomfort delays postnatal recovery, contributing to sleep deprivation and possible postnatal psychological sequelae for the mother. Pain incurred from surgical interventions impact on the mother’s confidence and ability to nurture and breastfeed her newborn, contributing to lower breastfeeding rates. Soft tissue scarring may extend to an emotionally distressing aftermath of delayed physical recovery and painful sexual problems. One study found that if women were distressed in the weeks following the birth, their confidence decreased and consequential “maternal distress negatively impacted on themselves, the baby, and the family”. Intervention and trauma is more likely to separate mothers from babies, delaying union at birth sometimes for extended periods, complicating early and ongoing breastfeeding.

Mechanical extraction of the baby’s head, via forceps or vacuum, can result in skeletal and soft tissue trauma such as oedema, bruising or indentations. It may also impede smooth function of the bilateral temporo-mandibular joint (TMJ) restricting lower jaw and self regulated cervical vertebrae (atlas and axis) movements. Miller (2009), in a case study of 114 babies, found that the main physical findings as a result of infant birth injury involved soft tissue or skeletal injury. Injuries involving the TMJ, the cranial plates and cranial suture lines are more likely to result in restricted unsynchronised suck-swallow. Impaired TMJ movement limits mouth opening and may also involve periauricular, facial and jaw pain, and headache impeding early intrinsic intra-oral vacuum for effective sucking. An increase in these injuries has led to an increase in the number of babies referred for paediatric osteopathic or chiropractic alignment.

Newborn trauma complicates the initiation and integration of cerebral coordination of sensory information and the basic neuro-physiological processing for accomplishing responsive (adaptive) breastfeeding behaviours. Separation and delayed breastfeeding in the first 72 hours of birth can result in increased risk of additional pain and discomfort.
associated with maternal breast engorgement and consequent nipple trauma. Conversely, a Polish hospital study identified that babies who remained undisturbed and in contact with their mother’s body can successfully negotiate self feeding without distressed cries, providing the elements are not “harsh, mechanical or rushed”.

Maternal and/or neonatal pain associated with birth trauma and bruising; nipple pain and trauma; and the belief that there is not enough milk, have been identified in the literature as the three common reasons for discontinuing breastfeeding. Evidence of nipple pain and trauma was recorded by Gunther as early as 1945 and painful nipple trauma contributing to breastfeeding decline has increased since then. Persistent nipple pain and trauma inhibits cyclical hormone function slowing the let-down reflex, while ineffective intra-oral contact diminishes breast stimulation and can result in declining milk volume confirming women’s belief in low supply.

Breast Milk Substitution

Another factor associated with declining breastfeeding is the strategic promotion, advertising and marketing of the science attributed to non-human milk products that continues to persuade health professionals to endorse laboratory formulated milk products, albeit more regulated and arguably more subtle. This strategic promotion perpetrates a social belief and western bio-medical view that human breast milk is a similar product to laboratory modified cow’s milk. At a conference in Darwin, Australia in 2009, a company advertising banner promoted a new improved product with “a tolerability profile similar to breast milk” stating “it takes a lot of science to get this close to nature.”

Lactation Consultancy
Breastfeeding practices across professional disciplines and other groups have fundamentally been enveloped historically in the social phenomenon of values, attitudes, knowledge’s and socio-political structures of the time.\(^{(64, 65)}\) In 1985, Maureen Minchin author and founder of the Australian Lactation Consultants Association (ALCA) proclaimed a special interest in the politics and professionalisation of lactation consultancy. Minchin embarked on an education campaign to improve the knowledge of lactation and the act of breastfeeding for Australian women.\(^{(66)}\) Also in 1985, the La Leche League International (LLLI) facilitated a gathering of sixty experts drawn from various health professions and geographic regions including the Australian Breastfeeding Association (ABA).\(^{(67, 68)}\) Collectively these bodies developed standards, competencies and scope of practice in preparation for founding the International Board of LC Examiners (IBLCE), the official body that administers the voluntary certification and examination for lactation consultants across six continents.\(^{(69-71)}\) The IBCLCE reports a total of 21,200 LCs worldwide (2010), Australia has the highest number of 2,185 out of a total of 4,754 in the Asia-Pacific Region.\(^{(71)}\) Australian and New Zealand Associations are currently merging to become the Lactation Consultants Australia and New Zealand (LCANZ) with a combined number of 2,412.\(^{(66, 69, 71)}\)

The increased professionalisation of breastfeeding has not reflected an increase in sustained breastfeeding for Australian women over the past two decades. This could be considered a problematic phenomenon in modern breastfeeding giving cause for concern, if not question, particularly when women describe the multiple variations in professional information and breastfeeding techniques as confusing and contradictory.\(^{(72)}\) Modern education and practice barriers that interfere with instinctive maternal-infant connections have the potential to increase complexities, resulting in mother-baby disconnection increasing the risk of breastfeeding cessation.\(^{(11, 65)}\)
Breastfeeding Techniques

During the late 1980’s and 1990’s international LCs, Chele Marmet, Ellen Shell, and Australian Rebecca Glover called for significant changes to breastfeeding techniques in an attempt to prevent the abiding phenomenon of ‘sore nipples’. Instruction to ‘attach’ babies to the breast became embedded in international breastfeeding practice, promotion and education programmes. Significant variations in breastfeeding occurred in response to the large volume of literature that referred to techniques aimed at achieving the correct ‘position’, ‘attachment’, a good ‘latch’ to prevent ‘sore nipples’, and getting most of the areola into the baby’s mouth. Variations of positioning, holding and attaching the baby included information targeting specific groups of women, for example those categorised as obese.

Methods advised in the literature at this time included the ‘cross cradle’ hold thought to be preferable for the small baby. This method of holding the baby was combined with rapid arm movement (RAM), a timed forward-thrusting technique designed to get the baby’s wide opened mouth to latch and take more breast tissue. Later a multiple sequence of new techniques advised the combination of the cross-cradle hold, re-shaping the breast, redirection of the ‘nipple to nose’ followed by an emphasised stroking movement of the nipple over the lips to hyper-stimulate the oral rooting reflex to achieve a wider opening of the mouth. These multiple techniques were to be performed so the RAM was in unison with a wide open mouth.

The introduction of these elaborate techniques to ‘attach’ a baby to the breast have had the disabling effect of confusion and making the act of breastfeeding too complex for many women. Women often feel unable to manage the multiple intricacies of the instructional process. Such complex techniques may have contributed to the “searing pain and
discomfort” as described by one third of women reported in the work of Schmied et al.[(85), p.45]. In the presence of pain, trauma, confusion and fear women struggle to commit to the next and subsequent breastfeeds. Feelings of inadequacy can lead to emotional and physical avoidance and may result in cessation of breastfeeding.[(85)]

In modern times the science of lactation tends to camouflage the instinctive or mammalian act of breastfeeding for survival and may be a contributing factor to decreasing breastfeeding rates. Practical education around current breastfeeding techniques that involves excessive, hands-on or forceful assistance by others alters the natural act of breastfeeding, alternatively hands-off enables the mother and baby to complete the neuro-physiological act by themselves.[(86)]

The authors suggest that newly adopted breastfeeding ‘techniques’ hinder the baby’s sensory survival skills, innate rooting reflex and intra-oral function. Multiple externally-controlled manipulations of the breast, nipple and infant alter instinctive timing and the unique sequencing of neurological reflexes by the infant, to breastfeed with only the mother’s innate guidance.[(11)] These multiple techniques may have inadvertently contributed to increased nipple pain and trauma.

**Linking Intra-oral Anatomy with Mammalian Sensory Integration**

The biomedical work of Woolridge (1986), in infant feeding, proposed a scientific perspective on ‘sore’ nipples that identified the importance of intra-oral synchronisation for breastfeeding. His simple anatomical and physiological explanation of the "mechanisms by which a baby removes milk from the breast", improved knowledge of intra-oral anatomy; an understanding that remains important today.[(82)] p.1
Since the work of Wooldridge, Colson (2008) and Geddes (2008) have added to this science. Geddes, using intra-oral ultrasound vision of breastfeeding infants, demonstrated that breast milk flowed without accentuated peristalsis, recommending further investigation into the tip of the tongue in milk removal. Geddes research showed how the infant applies increased intra-oral vacuum pressure with lowering of the mid-posterior tongue during the suck-swallow cycle. Geddes postulates that this may be important knowledge for babies experiencing difficulty obtaining an adequate oral seal at the breast. Colson (2008) observed and described neonatal reflexes and various feeding positions as ‘Biological Nurturing’. Colson suggests that innate mammalian behaviours and activation of newborn reflexes were fundamental to establishing breastfeeding and recommends further experimental comparative studies to build on this preliminary work. Improved understanding of intra-oral function of the tongue position and movement during the vacuum and swallow rhythms is one of several factors that raises further questions about contemporary manipulative techniques as a probable cause for nipple trauma.

Imprinted neurobehavioral similarities exist between humans and other mammals, linking intra-oral function with mammalian sensory skills. The unborn baby is already able to hiccup, yawn, quench thirst and satisfy appetite by innate swallowing of liquor at regular intervals, in preparation for breastfeeding. Genna (2007) defines the sensory integration of these behaviours as the coordination of optimal cerebral processes that excite touch, smell, and taste for survival. Synchrony of these innate behaviours to smell, taste and self locate the nipple can be observed with the healthy newborn. The newborn’s neurological desire to stimulate the flow of colostrum for survival follows location of the nipple with symmetrical mouth to breast contact and synergistic, intra-oral function. Unwarranted intrusions to these instinctive processes can derail these skills, impede ample colostrum/milk transfer and increase the risk of difficult or painful breastfeeding.
Discussion

In modern times little attention is paid to the ancient, skilled survival ability of the human mother and baby. Humans, like all mammals with equivalent brain size and neocortical structure, are capable of achieving breastfeeding from birth.\(^{(94)}\) Success is more likely in the absence of unnecessary medical intervention, pain, trauma or the effects of suppressive drugs and without the influence of forceful hands-on techniques.\(^{(94)}\) Modern breastfeeding practice needs to be challenged by revisiting old knowledge central to “biological nurturing” and essential to liberating innate abilities to initiate and support breastfeeding.\(^{(11, 85)}\)

To achieve recommended exclusive breastfeeding from birth to six months requires changes in education and practices that significantly and adversely influence Australian breastfeeding.\(^{(95-97)}\) Dismantling these social and practice barriers necessitates a paradigm shift that includes unconditional respect for the skills and innate capacity of women and their babies.

Breastfeeding duration could be improved by establishing the balance between necessary and unnecessary medicalisation and mechanisation of the bodies of healthy women.\(^{(98)}\) Striking this balance primarily gives birth back to women and revives the role of the midwife to a presence that is ‘with woman’ and less with supervising machinery. “Midwifery guardianship”, the role of the midwife to protect the woman’s birth space enabling undisturbed birth and breastfeeding, has the potential to decrease painful labour and birth procedures and to reduce emotional trauma.\(^{(19, 30)}\) A determined focus on these factors could lead to significant reduction in the induction of labour, use of Sytocinon and narcotic drug administration, a known inhibitor to exclusive breastfeeding.\(^{(35)}\)

Demedicalisation of women and birth involves revision and modification of current teaching to reduce complexities that interfere with mammalian survival instincts, newborn-
neonatal reflexes, intra-oral function and maternal knowledge that guide lactation and breastfeeding. Midwifery practice that teaches forceful breastfeeding techniques can be modified by enabling facilitation of quiet, protected space for women and babies to remain connected from birth and to ensure as far as possible, untouched, early uninterrupted initiation of breastfeeding. Similar supports enable the same application of mammalian principles to be extended over the following postnatal days and weeks until breastfeeding is established.\(^{(85)}\)

The authors believe increasing satisfying and sustained breastfeeding for most healthy babies can be assisted by the National Breastfeeding Strategy 2010 - 2015 \(^{(2)}\) and in preparing change around the following eight strategies to, 1) reduce unnecessary birth interventions; \(^{(98-100)}\) 2) avoid interfering with mammalian neurological and instinctive survival skills; \(^{(11)}\) 3) understand TMJ, cranio-spinal and intra-oral anatomical, neurological and physiological function; \(^{(44, 83, 101)}\) 4) maintain mother-baby contact from birth for at least the first 72 hours, preferably longer, even when assisted birth is necessary; 5) resist professional touching, controlling or interfering with the first and early breastfeeds; 6) avoid breast manipulation, nipple redirection and rapid thrusting of the baby to the breast; 7) increase research and improve knowledge about the possible effects of pharmaceutical and other substances transported to the unborn and breastfed baby, \(^{(102)}\) and 8) avoid overt and covert use and promotion of non-human milk products for babies.

**Conclusion**

This review highlighted several significant events that influenced breastfeeding in Australia commencing in the early 1970s with the rise in institutionalisation and medical intervention in labour and birth. At the same time midwives became ensconced in the use of medical technology inadvertently medicalising a large component of traditional midwifery
practise. Actively managed labour intensified pain requiring increased administration of opiate drugs despite the known effects on feto-maternal bio-chemical conjugation, including the suppressive effect on the newborn central nervous system slowing the innate ability of the baby to breastfeed. The authors argue that the complexities of increasing medicalisation of labour and birth and the professionalising and ‘pathologising’ of breastfeeding maybe contributing to delay in the first breastfeed, separation of mother and baby and the decrease in the duration of breastfeeding. A return to more instinctive, mammalian techniques is required to improve women’s breastfeeding experiences. Only then do we believe we will see a rise in breastfeeding duration with the associated health benefits.
References


