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Practice Guidelines

"I didn't feel any less." - What role do nipple shields have in clinical practice?

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ABSTRACT

Breastfeeding is an intensely personal experience but has become a major political issue. We found mothers at this highly emotive and vulnerable time subject to strong opinions, both Professional and personal that stigmatized adjuncts to breastfeeding. If medically indicated, nipple shields can be a powerful tool, to sustain breastfeeding. As healthcare professionals, we should strive to empower mothers to overcome the challenges of breastfeeding, and provide mothers with all the support they need to optimise care.

Breastfeeding is an intensely personal experience but has simultaneously become a major political issue (Palmer, 2009). Increasing political interest and professional guidance has led to significant improvements in societies' view of the importance of breastfeeding and support provided (Schafer et al., 2017), although the latter remains grossly underfunded and inadequate in most maternity units. Mothers at this highly emotive and vulnerable time can be subject to strong opinions. Media and family impose a view on what is right or wrong in relation to breastfeeding, often overshadowing a mother's own assessment of what ultimately is best for her (Robinson, 2018). In this respect, it is important that as healthcare professionals, we treat each mother-infant dyad as unique, and do not allow our biases to lead to maternal preconceptions. We also have a responsibility to make sure that personal concerns about adjuncts to breastfeeding do not overtake our judgement on what - on an individual level - may be beneficial.

1. How are nipple shields perceived?

The use of nipple shields evokes a strong negative response from many midwives, even though there is clear evidence that they can be advantageous in certain cases. Many midwives believe that nipple shield usage will reduce milk transfer and increase nipple trauma, while also leading to 'nipple confusion' and to early weaning (Meier et al., 2000). Some midwives simply exhibit philosophical objections to an artificial barrier between mother and baby. Likewise, many mothers experience a negative association towards nipple shields. This can be attributed to both, past adverse reporting, as well as today's societal expectations and judgement. Past origins of negative maternal attitudes towards nipple shields can be attributed to the following: *i) Inappropriate expectation:* In the past, lack of professional advice and appropriate education on breastfeeding has fostered the build-up of physical struggles and negative beliefs around breastfeeding, and the anticipation of many mothers that the use of nipple shields alone will serve as a solution to perpetuate breastfeeding (Eglash et al., 2010). *ii) Incorrect inference:* Breastfeeding discontinuation in struggling mother-infant dyads, for whom the use of a nipple shield has not elicited the anticipated effect, was then blamed on the ineffectiveness of the nipple shield, not on the absence of trouble-shooting the underlying cause for a dyad's breastfeeding difficulties.

Today's societal judgement on the use of nipple shields became apparent when interviewing a cohort of mothers regarding the potential of a novel drug delivery system for use during breastfeeding. In particular, the following three themes became apparent:

(1) **The culture in social media has a negative impact on the personal experience of breastfeeding.** "*I didn't think they were that good. […] Because what people say on websites and sometimes comments [of] mummies talking in WhatsApp and things. They always say 'the nipple shield takes away the experience of breastfeeding'*".
(2) **The use of nipple shields is a sign of failure to be able to breastfeed 'naturally'**. Using nipple shields for feeding was perceived to be in conflict with the 'natural' process of breastfeeding. Mothers indicated that antenatal classes seem to convey a negative expectation of the sensation when using nipple shields, making mothers requiring adjuncts to breastfeeding feel, as if they had failed. "[…] *it should be an emergency method only to sort of keep you feeding, and then sort something out as to why there is a problem.*"
(3) **Differences in maternal expectations and experiences for the use of nipple shields exist.** These differences were highlighted by the following associated comments: "*I think, we [as midwives] try and say 'don't use nipple shields, don't use dummies, don't use teats'. But the reality of it is … I know all these things, but he [my baby] is having a dummy, he is having nipple shields, got teats, and I am sure we will breastfeed just fine.*" and "*I didn't feel any less. No less [using nipple shields].*"

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2. What is the role of a nipple shield?

Temporary use of nipple shields can be helpful to address problems in latching and sucking, caused by either the mother's or the infant's physiology. If used with appropriate advice, nipple shields may provide an important adjunct to support continued breastfeeding, and hence mothers' imposed feeling of guilt associated with their use is not helpful. In our clinical work, we were able to identify a number of indications, in which the use of nipple shields should be considered as part of an intervention checklist. It is important to note that each intervention should always aim to address the individual needs of the respective mother-infant dyad, and that use of a nipple shield can be less helpful when aiming to address pain caused by sore nipples, or maternal anxiety. In the latter two instances, nipple shields will simply serve as a measure to cover the "pain problem" or the "anxiety problem" instead of identifying and addressing its actual cause.

(a) **Maternal reasons:** In some cases, maternal physiology might not be conducive to breastfeeding, for example if the mother has flat or inverted nipples, large breasts or engorgement (Kronborg et al., 2017). In those cases, use of a nipple shield ought to be considered to support the mother-infant dyad in the further establishment of breastfeeding and the building of confidence.

(b) **For the preterm infant:** Premature infants have a number of challenges to overcome, one of which is the establishment of oral feeding. The point in time and feasibility of establishing breastfeeding is affected by the infants' prematurity, the level of respiratory support required, as well as their neurological and their sensory experiences. In preterm infants the suck-swallow-breathe co-ordination is not well established and sucking patterns are immature. In order to express milk, preterm infants would thus more often make use of expression-compression patterns rather than suction, which is not conducive to successful breastfeeding (Lau et al., 2000). In addition, preterm infants have increased difficulty in maintaining an effective latch on the nipple, as their suction strength is weaker than those of their term peers. While this strength does increase over time (Amaizu et al., 2007), premature infants may require some extra support in the early stages. The use of a nipple shield during this time can be beneficial, as it provides a stable shape and surface, supporting attachment even during pauses between suck bursts – a time when the infant may typically slip off the breast (Meier et al., 2000). As infants grow and mature, so does their suction strength and suck pattern increase, subsequently enabling effective feeding without the need for any breastfeeding adjuncts.

(c) **For infants generally:** There are a number of challenges potentially present in infants of any gestational age, which can hamper a dyad's breastfeeding efforts. Difficulties vary but may include the following: presence of a restricted lingual frenulum, infants with difficulties in suck-swallow-breath coordination, a condition often present in growth restricted or small for gestational age infant, or when a mother has a strong milk ejection reflex. Assessment by a lactation professional is key to identify if and which measures are required to assist the dyad's breastfeeding efforts and a nipple shield could be considered, if repositioning efforts have not lead to an improvement of milk transfer, or in the case of an infant who is continuing to struggle with its suck-swallow-breath coordination during breastfeeding.

3. Clinical implications

Supporting mothers in the establishment and continuation of breastfeeding is of major importance. This is particularly the case in the UK, where breastfeeding rates are amongst the lowest in Europe (Victora et al., 2016). Guidance by the Baby Friendly Initiative (BFI) does not preclude the use of nipple shields but indicates its standards as to "protect and support breastfeeding" and to "enable babies to receive breastmilk and to breastfeed when possible". Appropriate advice and support for mothers is critical, as breastfeeding, although a major commitment and personally challenging, can be a fulfilling experience. If medically indicated, nipple shields can be a powerful tool, helping mothers and infants to sustain breastfeeding. As healthcare professionals, we should strive to make this a positive experience: we should not stigmatise but embrace appropriate interventions that empower mothers to overcome such challenges and continue breastfeeding. We need to know when they can be helpful and be able to provide mothers with the support they need to optimise care.

Competing interest

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