President's Corner

The “Haves” and the “Have Nots”

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THE SOCIODEMOGRAPHIC PREDICTORS of breastfeeding in the United States (and much of the rest of the world) are all too well known to most of us. For example, women who are more educated, older, married, don't smoke, or have a higher socioeconomic status are more likely to breastfeed their infants than those without these characteristics. Unfortunately, many of these factors are also associated with poorer health outcomes for both women and children from causes unrelated to not breastfeeding. When I am working in the nursery and clinics, this phenomenon often leads me to a renewed frustration that the babies who need to be breastfed the most are the ones least likely to be given the opportunity. As I read a study last month, I had the poignant realization that mothers who stand to benefit the most from breastfeeding may also be those least likely to choose to do so.

Strathearn et al. reported in the February 2009 issue of *Pediatrics* results of a large, prospective study in Australia that noted an inverse association between duration of breastfeeding and substantiated maternal perpetration of abuse or neglect. After adjustment for confounding, odds for maternal maltreatment were 2.6 times higher when no breastfeeding was compared to breastfeeding ≥ 4 months. As dose-responsiveness seems to be the rule of thumb with the risks of not breastfeeding, the authors aptly point out that the association may be even stronger for exclusive breastfeeding, as partial and exclusive breastfeeding were not differentiated. The association between maternal neglect and breastfeeding was dose-responsive with respect to breastfeeding duration.

The authors take care to note this is not proof of causality, as there is certainly potential for selection bias—we can't randomize mothers to breastfeed or not. Alas, the science would be so much cleaner if we could. The authors did, however, adjust for many potential confounders, including pregnancy wantedness, substance use during pregnancy, postpartum employment, caregiving attitudes, and symptoms of anxiety or depression. The intrigue, of course, is that there *may well* be a causal association—breastfeeding itself may actually protect against maternal abuse or neglect, a causality for which the authors make a compelling argument. Not that this argument is entirely new—I personally first learned about changes in the mother that breastfeeding causes a few years ago reading Dr. Sarah Hrdy's *Mother Nature: A History of Mothers, Infants and Natural Selection*, about which I was so enthusiastic that I wrote a review in *ABM News and Views*

(Chantry, 2004). It still excites me, but now more is known and it has greater implications when considered in the wider context of epigenetics. I'm bringing it back to make certain you are aware of it.

Oxytocin is, as I first heard the good Dr. Marshall Klaus describe it at an ABM conference 10 years ago, the *love hormone*. In randomized trials, it results in greater trust and reduces fear and anxiety. Animal studies have shown that suckling activates similar regions in the brain as does oxytocin. But, the real intrigue for me is the evidence that the breastfeeding act itself (suckling and other stimulation by the infant) actually seems to change the mother's brain, e.g., by maintaining oxytocin receptors induced during pregnancy and the peripartum period. And suckling, when studied in animal models via functional magnetic resonance imaging, actually stimulates brain regions that are “rewarding” (the same areas involved in addictive behavior), likely to condition a preference toward the infant. Might this protect against maltreatment?

Oxytocin also enhances certain types of memory and learning . . . and ultimately results in long-term changes in maternal behavior. Thus, not only does the breastfeeding release oxytocin, it also makes the response to oxytocin persist longer via preservation of receptors and may result in long-term or even permanent changes via memory and learning. As the researcher and author Kerstin Uvnäs Moberg describes oxytocin, “Under its influence, we see the world and our fellow humans in a positive light; we grow, we heal.” So the mother who breastfed is simply not the same mother as she would have been if she had not breastfed.

What does this have to do with the “haves” and the “have nots”? Two things come to mind. The mothers who have fewer advantages in terms of socioeconomic, marriage, education, etc., may be those who most would benefit from the advantages—the psychological “rewards” offered to them by the breastfeeding experience in addition to the health advantages. I often sense that the mothers who are choosing not to breastfeed are the ones who most need the rewarding sensations and extra bonding with their babies that breastfeeding can provide. Maybe they were ambivalent about the pregnancy or have other stresses or experiences that have led them to decide that substitute nutrition is “good enough.” But with my newer awareness of epigenetics, it leads me to wonder how much of the increased sensitivity to oxytocin's effects and changes in maternal behavior

wrought by breastfeeding are heritable? Could lessened sensitivity to oxytocin be related to the choice to not breastfeed? Maybe epigenetics has something to do with the fact that mothers who were breastfed are more likely to breastfeed. It may be more than an influential maternal grandmother or the mother's view of cultural normalcy. Perhaps lessened oxytocin responsiveness in offspring of non-breastfeeding mothers and *their* offspring is the epigenetic counterpart to children of Holocaust victims that suffer from post-traumatic stress disorder having altered responsiveness to dexamethasone (Yehuda and Bierer, 2008). (Can I interest any of you in developing an animal model to test this hypothesis?) And how much of this changed maternal behavior might build more emotionally robust children (who become more emotionally robust adults)? Erickson's first psychosocial task is development of trust. Even if this differing sensitivity to oxytocin only affected the first year of mothering, it seems we might have a more trusting . . . and trustworthy . . . world.

So just maybe when we exert our influence on the mother's choice of infant feeding, we are not only influencing her and her infant's health and her subsequent maternal behavior, but also the kind of mother that baby will eventually become. Just maybe we are influencing the cycle of disadvantage begetting disadvantage. It gives me pause when wondering how exactly, and with what vigor and emphasis, to best do

the dance of exerting that influence. We have so much to learn. Understanding too that breastfeeding my children has affected my "reward center" helps me understand why I, as many of you, are so passionate about helping mothers and babies by promoting, protecting, and supporting breastfeeding.

References

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