

Breast is no longer best: promoting normal infant feeding

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Abstract

The recent release of new growth charts by the World Health Organization (WHO) heralds a fresh understanding of what constitutes normal infant growth and development. The Multicenter Growth Reference Study that underpins these new growth standards ‘establish[es] breastfed infants as the normative model for growth and development’. This is in contrast to past practice, which treated breastfeeding as the optimal, rather than the normal, way to feed babies. This idealization of breastfeeding has been counterproductive, because it has reinforced a perception that formula feeding is the standard way of feeding babies. It is, therefore, suggested that breastfeeding promotion and education programmes should abandon the ‘breast is best’ message in favour of messages that normalize breastfeeding, and that future research ought to use infants breastfed according to WHO recommendations as the norm reference or control group in every instance.

Keywords: WHO growth charts, breastfeeding promotion, Multicenter Growth Reference Study, infant formula, bottle feeding.

Introduction

For decades, professionals concerned with promoting infant and maternal health have been telling the world that ‘breast is best’, and that breastfeeding provides optimal nutrition for infants and confers many immunological, psychological and hormonal benefits over commercial substitutes (Winikoff & Baer 1980; Uauy & Peirano 1999; Leung 2005). However,

concern has also been building that these ‘breast is best’ and ‘benefits of breastfeeding’ messages fail to communicate the pivotal role that breastfeeding plays in the growth and development of infants and young children. In fact, these messages may have come to obscure the importance of breastfeeding to infant and maternal health. A vast body of evidence pointing to the significance of breastfeeding continues to accumulate (Labbok 2001; Labbok *et al.* 2004; Horta *et al.* 2007; Ip *et al.* 2007). This paper will illuminate a recent notable addition to this body of evidence, the World Health Organization (WHO)’s Multicenter Growth Reference Study (MGRS). The results of the MGRS

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suggest that it is time for health professionals to rethink the way that they consider breastfeeding and to change the way that they speak to mothers and the community about the importance of breastfeeding.

Health professionals are enjoined to provide reassurance to parents when their children are thriving and to be vigilant for signs of abnormal growth and development. Assessing the growth and development of infants and young children is a complex process. Among the tools most commonly used to assess infant well-being are growth reference charts. Growth references are valuable because numerous physiological processes must proceed normally for growth to proceed normally – and faltering growth may be an indication of underlying pathology (Garza & de Onis 2004). Although a variety of growth charts have been developed, for 30 years the most commonly used growth reference charts have been (or have been based on) the United States National Center for Health Statistics (NCHS) and WHO growth reference charts (de Onis & Yip 1996). However, in the latter part of the 20th century, concerns arose about the accuracy of these tools. As a result, the WHO undertook the MGRS. The MGRS measured the growth and development of normal infants from a variety of ethnic backgrounds, in a variety of locations, whose environments were demonstrably conducive to healthy growth and development. The aim of the MGRS was the development of a growth standard that health professionals could confidently apply to all children.

Infant growth charts – a short history

The WHO/NCHS growth reference charts were produced using data collected by the Fels Longitudinal Study. The Fels study was conducted in a middle-American town between 1920 and 1975, among an ethnically homogenous group of infants who were rarely breastfed beyond 3 months of age, and who were routinely supplemented with non-human milks (Victora *et al.* 1998). In 1994 the WHO Working Group on Infant Nutrition stated that they were concerned that the growth of healthy breastfed infants appeared to falter when compared with the pattern described by the WHO/NCHS reference charts and

that their validity should be questioned (Dewey *et al.* 1995). The Working Group recommended the development of a new standard that would indicate how all children should grow, rather than just describing how some children grew at a particular time and place (Garza & de Onis 2004). In order to achieve this, the WHO initiated the MGRS and restricted subjects in the study to term infants of non-smoking mothers who lived in socio-economically advantaged populations, who were exclusively breastfeeding for around 6 months, and who continued to breastfeed, after the introduction of complementary foods, for up to 2 years or more as recommended by the WHO/UNICEF (2003). Over 6 years, in six countries the WHO MGRS Group collected anthropometric data from 8500 children, which was compiled to create the new WHO growth charts. The Study Group asserts that the new ‘standards depict normal infant growth . . . and can be used to assess children everywhere, regardless of ethnicity, socio-economic status and type of feeding’ (WHO Multicenter Growth Reference Study Group & de Onis 2006).

The data from the MGRS and the resulting WHO growth standards validate concerns about the old WHO/NCHS growth charts; it is now clear that the WHO/NCHS growth reference charts do not describe normal infant growth. When compared with the data from the MGRS, the Fels infants gained less weight in the early weeks and more in later infancy (WHO Multicenter Growth Reference Study Group & de Onis 2006). It is likely that the use of WHO/NCHS growth reference charts has resulted in decades of under-recognition of underweight early in infancy and overestimation of growth faltering later in infancy. Thus, early feeding difficulties have not been appropriately addressed and healthy growth has been pathologized. It is likely that this deficiency has led to the unnecessary use of breast milk substitutes, exposing millions of infants to the health risks associated with the use of infant formula, including an increased risk of childhood obesity (Harder *et al.* 2005). Furthermore, the MGRS also reveals that the WHO/NCHS reference charts present overweight infants as normal (WHO Multicenter Growth Reference Study Group & de Onis 2006). The MGRS demonstrates that when formula-fed infants are held to be representative of

infants in general, normal growth patterns (and probably normal behaviour) are at risk of being unnecessarily pathologized. Furthermore, pathologies associated with artificial feeding go unrecognized; and at a population level, the relationship between feeding method and common morbidities is not addressed.

A movement towards breastfeeding as normal

The WHO's decision to develop infant growth standards based solely on children fed as recommended by health authorities, is part of a general movement among researchers and public health advocates to 'establish the breastfed child as the normative model for growth and development' (de Onis 2006).

Breastfeeding has always been the physiological norm. However, over the past hundred years or so, artificial feeding had become so ubiquitous in many developed world settings, as to be widely viewed as the standard way to feed infants (Auerbach 1992; Henderson *et al.* 2000). In the 20th century, breastfeeding initiation rates fell to as low as 55% in Australia (Manderson 1985), 30% in the UK (McKean *et al.* 1975) and 25% in the USA (Martinez & Krieger 1985). While breastfeeding rates have improved, premature weaning from breastfeeding and the early use of breast milk substitutes remains a serious problem in every developed nation, including Australia, the USA, the UK, Canada and even Norway (Callen & Pinelli 2004; Lande *et al.* 2004).

The changes in infant feeding practices that occurred in the 20th century, and the associated positioning of formula feeding as normal, have affected not only the general population but also scientists, so that research questions have been almost universally framed in terms that refer to partially breastfed or not-breastfed infants as the control group. Some scientists continue this practice. Such research concludes that breastfeeding *reduces* mortality and morbidity in infants and *enhances* development – as if breastfeeding were a health intervention, akin to the use of a pharmaceutical (e.g. Chen & Rogan 2004). As a result, many researchers and health professionals speak about 'the advantages of' or 'the benefits of' breastfeeding, and describe breastfeeding as 'best'.

However, as noted earlier, breastfeeding is not an intervention but the physiologically normal way to feed babies. Furthermore, a body of research, including the MGRS, demonstrates that the growth, health and development patterns of artificially fed infants deviate from those of breastfed infants (Dewey *et al.* 1995; de Onis & Yip 1996; Chee 1997; Dewey 1998; Pinelli *et al.* 2003; WHO Multicenter Growth Reference Study Group & de Onis 2006). The validity of health-promotion discourses that present breastfeeding as other than the norm reference should, therefore, be re-evaluated on the grounds that they are inaccurate and may be misleading. It has also come to be understood that the 'breast is best' message is problematic, because it implies that formula feeding is normal and that breast milk substitutes provide satisfactory nutrition. Furthermore, if formula feeding is viewed as satisfactory, then it follows that the 'advantages' conferred by breastfeeding are superfluous, optional extras (Weissinger 1996).

The potential for this interpretation of the 'breast is best' message has been demonstrated empirically by Hannan *et al.* (2005), who found that while most of their respondents agreed with the statement 'Breastfeeding is healthier for babies', half to three-quarters of the same people did not agree that 'Feeding a baby formula instead of breast milk increases the chances the baby will get sick'. That is, respondents agreed with a statement indicating that breastfeeding had health benefits, while simultaneously disagreeing with a similar statement framed negatively, ascribing adverse health consequences to feeding babies with infant formula.

Further, although health-promotion activities have resulted in almost universal acceptance that breastfeeding is 'best', focus-group research associated with the formulation of a public health campaign in the USA found that women did not believe that there were disadvantages associated with not breastfeeding. Rather, they viewed 'breastfeeding . . . [as] like supplementing a "standard diet" with vitamins. Formula, by default, is credited with . . . being 'the standard' " (National Women's Health Information Center 2004). More recent research has found that one in four Americans believes that 'Infant formula is as good as breast milk' (Li *et al.* 2007). It is thought

that these findings may be a reflection of advertising campaigns that, while making a 'breast is best' statement, simultaneously compare the composition of infant formula favourably to that of breast milk. It appears that the 'breast is best' message has been successfully appropriated as a tool in the marketing of infant formula, and that manufacturers are happy to describe breastfeeding as 'best' while promoting their products as 'like breast milk' and as safe, harmless and nutritious (ICDC 2005).

It appears, then, that a significant proportion of women who have heard the message that breastfeeding is 'best' for their babies do not realize that this means that there are negative health sequelae associated with premature weaning from breastfeeding (Hannan *et al.* 2005; Li *et al.* 2007). Without this information, they are unable to make informed choices about how they will feed their infants.

A lack of understanding that artificial feeding is a risky health behaviour may have occurred, because it seems that health-promotion activities have deliberately avoided any mention of the risks of artificial feeding. They have rather preferred simply to say that 'breast is best', and assume that individuals will be able to deduce that this means that there are negative consequences to using infant formula. As stated, there is now evidence that this is simply not occurring (Hannan *et al.* 2005; Li *et al.* 2007). The emphasis on the 'breast is best' message has, therefore, come to obscure the fact that infants who are artificially fed are at a greater risk of developing a number of acute and chronic illnesses. This has left mothers – and perhaps some health professionals – unaware of the hazards associated with the use of infant formula. Many would be unaware that: in developed world contexts, infants who are not breastfed are nearly five times more likely to be hospitalized in their first year due to gastrointestinal and respiratory illness (Paricio Talayero *et al.* 2006); a single early exposure to infant formula may initiate a series of immune responses leading to type 1 diabetes mellitus (Villalpando & Hamosh 1998); and infants who are not breastfed are much more likely to become adults who are overweight, obese, hypertensive and suffer from elevated cholesterol (Owen *et al.* 2002; Fewtrell 2004; Sadauskaite-Kuehne *et al.* 2004; Harder *et al.* 2005; Lawlor & Smith 2005; Horta *et al.*

2007; Ip *et al.* 2007). Perhaps even fewer would be aware that early weaning can lead to adverse health outcomes for mothers, such as elevated risks of breast (Collaborative Group on Hormonal Factors in Breast Cancer 2002) and ovarian (Labbok 2001) cancers, hip fracture (Cumming & Klineberg 1993), type 2 diabetes mellitus (Stuebe *et al.* 2005) and heart attack (Stuebe 2007).

It is this ignorance of the risks associated with artificial feeding that has led women and many health professionals to view the use of infant formula as benign. Consequently, when feeding challenges associated with breastfeeding present themselves, bottle feeding is viewed as a simple solution. Furthermore, governments and society in general are reluctant to assign resources to the education and social support that enables mothers to breastfeed, because they do not recognize that not doing so is costly. Therefore, workplaces, child care centres and many community facilities (including hospitals) may view breastfeeding as inconvenient and unnecessary, and may even actively encourage mothers to wean their infants earlier than the WHO recommends.

The issue of how best to communicate the importance of breastfeeding and the health risks associated with premature weaning is difficult. Concerns have been raised that informing mothers about the risks associated with the use of infant formula may make them feel guilty (Rabin 2006) and negatively impact their mental health and their relationships with their healthcare providers (Murphy 1999). However, in other health arenas it has been recognized that individuals are entitled to make informed choices about their health (Hibbard *et al.* 1997). Furthermore, it may be argued that it is paternalistic to seek to protect women from the information they need to make informed choices about feeding their infants, because doing so suggests that mothers are incapable of understanding and weighing risks, incapable of making good decisions for themselves and their infants.

It is also evident that providing mothers with accurate information about the importance of breastfeeding to the health of their infants can result in changes in infant feeding decisions. Miracle *et al.* (2004) found that informing the mothers of premature infants of the importance of breast milk to the health of their

babies led many who previously intended to artificially feed to choose instead to breastfeed. This research found that such mothers, rather than feeling guilty or coerced, as it is often argued they will, feel good about their choice to provide their own milk to their babies and frustrated and angry with health professionals who did not provide them with accurate information about the importance of breastfeeding from the outset (Miracle *et al.* 2004).

However, it is also clear that providing mothers with accurate information about breastfeeding and infant formula is not enough (Hoddinott & Pill 2002). Mothers also need practical support to breastfeeding from their family, friends, their health professionals and society in general. Public education campaigns that inform all citizens of the importance of breastfeeding to the health of mothers and infants are needed to bring about awareness of the health and economic costs of low breastfeeding rates.

Conclusion

The MGRS and the new WHO infant growth standards legitimate an emerging understanding among health promoters, policy developers and researchers that breastfeeding is not a health intervention, nor is it the 'best' way to feed infants. Breastfeeding is, and has always been, physiologically normal. Health-promotion efforts that refer to 'benefits of breastfeeding' or describe breastfeeding as 'best' need to be re-evaluated in the light of recent evidence that suggests that this approach can actually undermine mothers' efforts to breastfeed. Until the importance of breastfeeding for normal growth and development, and the risks and costs associated with premature weaning, become salient to mothers and to the wider community, it is unlikely that appropriate resources will be provided to enable mothers to breastfeed their infants. Health-promotion efforts now need to begin the process of returning breastfeeding to a socio-cultural norm.

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