

Abstract

# Development of Breastfeeding Behaviours in Preterm Infants <sup>†</sup>

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**Abstract:** Breastfeeding is particularly important for vulnerable preterm infants as it provides protection from infections and reduces newborn mortality. However, preterm infants are often too immature to breastfeed after birth and may have medical conditions that require admission to the neonatal nursery. The published literature on the development of preterm feeding skills has focused mostly on bottle feeding. In order to better support breastfeeding after preterm birth, there is a need for evidence on the development of breastfeeding skills in preterm infants. The aim of this study was to examine breastfeeding skill development in a group of infants born at 25–33 weeks' gestation. Infants were assessed during weekly monitored breastfeeds from 33 weeks corrected gestational age (CGA) using the Preterm Infant Breastfeeding Behaviour Scale (PIBBS), and milk transfer was measured. Mothers rated PIBBS items—rooting, areolar grasp, latch to the breast, sucking, longest sucking burst and swallowing—and clinical staff performed test weights. Pearson correlation was used to assess changes in PIBBS scores items over time and associations between total PIBBS score and milk transfer volume. Total PIBBS scores at 33, 34 and 35 weeks' CGA were compared between groups of infants born at <30/40 and 30–33/40 weeks using Student's *t*-test. Our cohort consisted of 60 preterm mother–infant dyads recruited from the neonatal nurseries at King Edward Memorial Hospital between February 2015 and February 2016. A positive trend was found between increasing CGA and higher ratings for six PIBBS items: rooting ( $R^2 = 0.08$ ,  $F(1, 164) = 13.9$ ,  $p < 0.001$ ), areolar grasp ( $R^2 = 0.11$ ,  $F(1, 164) = 21.0$ ,  $p < 0.001$ ), latching ( $R^2 = 0.14$ ,  $F(1, 164) = 27.5$ ,  $p < 0.001$ ), sucking ( $R^2 = 0.14$ ,  $F(1, 164) = 27.1$ ,  $p < 0.001$ ), longest sucking burst ( $R^2 = 0.17$ ,  $F(1, 164) = 32.3$ ,  $p < 0.001$ ) and swallowing ( $R^2 = 0.14$ ,  $F(1, 163) = 26.1$ ,  $p < 0.001$ ). A higher total PIBBS score was associated with a higher milk transfer volume (mL) ( $R^2 = 0.214$ ,  $F(1, 164) = 44.8$ ,  $p < 0.001$ ). When compared to infants born at 30–33 weeks' gestation, infants born at 25–29<sup>+6</sup> weeks' gestation had similar PIBBS scores at 33 weeks' CGA ( $9.2 \pm 3.6$  vs.  $9.5 \pm 4.1$ ,  $p = 0.83$ ) and lower scores at 34 weeks' CGA ( $9.2 \pm 3.4$  vs.  $11.7 \pm 4.3$ ,  $p = 0.036$ ) and 35 weeks' CGA ( $12.3 \pm 3.1$  vs.  $14.9 \pm 3.5$ ,  $p = 0.031$ ). The development of preterm breastfeeding skills advances from 33 weeks CGA with wide inter-individual variation and slower progression observed in those born < 30 weeks' gestation. Therefore, an individualised approach to anticipatory guidance regarding breastfeeding progression during the neonatal nursery stay is needed. Findings from this study can contribute to the formation of breastfeeding information resources for clinical staff and parents of preterm infants.



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