

ORIGINAL RESEARCH

Suboptimal Breastfeeding Practices among Women in Rural and Low-Resource Settings: a Study of Women in Rural Mysore, India

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Abstract

BACKGROUND Breastfeeding rates are progressively increasing worldwide while optimal breastfeeding practices are lagging behind, especially in rural and low resource settings like India.

OBJECTIVES This study estimated the prevalence of and factors associated with suboptimal breastfeeding practices among mother-infant dyads in rural southern India.

METHODS This is a cross-sectional analysis of data collected in Mysore District from 2008-2011 from 1294 mother-infant dyads. All women answered an interviewer-administered survey, which included maternal, infant, and sociodemographic information and breastfeeding-related characteristics. Logistic regressions were conducted to determine factors associated with suboptimal breastfeeding practice.

FINDINGS About 20% (n = 281) of mothers reported delayed initiation of breastfeeding. Mothers who were unsatisfied with the infant's gender had higher odds of delayed breastfeeding (adjusted odds ratio [AOR]: 1.42, 95% confidence interval [CI]: 1.00, 2.00). Odds of delayed initiation were significantly lower among mothers who received 7-10 antenatal checkups (AOR: 0.59, 95% CI: 0.41, 0.87) and assistance during breastfeeding (AOR: 0.73, 95% CI: 0.57, 0.95). About half (51.4%) the sample did not breastfeed exclusively for the first 6 months. Older age was associated with lower odds of nonexclusive breastfeeding (AOR: 0.95, 95% CI: 0.92, 1.00). Compared with mothers with no education, mothers with primary education (AOR: 1.94, 95% CI: 1.35, 2.79) or more than primary education (AOR: 1.58, 95% CI: 1.10, 2.26) had higher odds of nonexclusive breastfeeding.

CONCLUSIONS Optimal breastfeeding practices were influenced by a multitude of factors, including maternal age, education, number of antenatal checkups, receiving assistance with breastfeeding, and satisfaction with the infant's gender. Health promotion efforts should focus on encouraging mothers to attend antenatal care visits. Early antenatal education and counseling should include breastfeeding education in early antenatal visits. Further research should examine how to mitigate the effect of gender preference on initiation of breastfeeding.

KEY WORDS delayed breastfeeding, determinants, India, infant, nonexclusive breastfeeding, practices, rural.

The authors declare that they have no competing interests.

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INTRODUCTION

Breastfeeding is the most natural way of nurturing infants and the most cost-effective and health-promoting form of infant feeding that mothers can easily perform. Human milk is considered an infant's first immunization, primes the gastrointestinal tract, and affects the postnatal adaptation of neonates.¹ It is estimated that if breastfeeding were universal, 823,000 deaths per year in low- and middle-income countries could be prevented.¹ Since the early 1970s, the World Health Organization (WHO) and UNICEF (the United Nations International Children's Emergency Fund) have promoted breastfeeding practices through development of international standards and policies. These include the WHO International Code of Marketing of Breast Milk Substitutes (1981), the WHO/UNICEF joint statement "Protecting, Promoting and Supporting Breastfeeding" (1982), the "Innocenti Declaration on the Protection, Promotion, and Support of Breastfeeding" (1990), and the Baby-Friendly Hospital Initiative (1992). Two of these breastfeeding practices include early initiation of breastfeeding (within 1 hour of birth) and exclusively breastfeeding the child for first the 6 months.²

Although breastfeeding rates are progressively increasing worldwide, optimal breastfeeding practices are lagging behind, especially in rural and low-resource settings,³⁻⁵ including rural populations in India. According to the 2015 World Breastfeeding Trends Initiative Report, India ranked 78 out of 150 countries surveyed on breastfeeding practices with fewer than half (44.6%) of newborns born annually breastfed within the first hour of birth and about two-thirds (64.9%) optimally breastfed during the first years of life.⁶ Therefore, understanding and identifying factors associated with suboptimal breastfeeding practices in rural and low-resource settings can help improve nutrition care in early years of life and contribute to achieving the United Nations Sustainable Development Goal 3 (SGD 3) of reducing neonatal mortality to at least as low as 12 neonatal deaths per 1000 live births by 2030.⁷ This paper discusses the factors associated with suboptimal breastfeeding practices, defined as delayed initiation and nonexclusive breastfeeding, in rural Mysore, India.

METHODS

Setting. There are 3,001,127 residents of Mysore District, of whom 1,489,527 (49.6%) are female. More than half (58.6%) of residents live in Mysore Dis-

trict's 1332 rural villages. The annual per capita income is estimated at INR16,086 [US\$322] for rural residents compared with an all-India annual per capita income of INR38,005 [US\$760]. The literacy rate among rural residents (63.3%) is lower than country's overall literacy rate (74.0%). Residents of Mysore District identify as Hindu (87.7%), Muslim (9.7%), Christian (1.3%), or other religion (1.3%).^{8,9}

Sample. A prospective cohort study was conducted by the Public Health Research Institute of India (PHRII) from April 2008–March 2012 in Mysore District, Karnataka, India to assess the acceptability and feasibility of using mobile medical clinics to provide integrated antenatal care and HIV testing. PHRII staff received permission from community leaders before initiation of any activities in the community. With the support of community leaders, all residents of the community were invited to participate in an education and awareness program. Pregnant women were given details about the mobile clinic during the education program and were invited to attend the following day. All participants were asked to provide written or oral consent. Women were excluded if they could not provide written or oral consent.

The study was reviewed and approved by the Institutional Review Boards of the PHRII and Florida International University, Miami, Florida.

Data Collection. This cross-sectional analysis was nested in the cohort study. Staff interviewed expectant mothers attending mobile clinics before births. Two follow-up interviews were conducted at the mothers' homes within 15 days after birth and again at 6 months after birth.

Measurement. Participants answered a pretested standardized interviewer-administered questionnaire based on National Family Health Survey to collect information on a child's birth history, general health, immunization schedule, and breastfeeding status and a woman's general health, sexual health, birth preparedness after current pregnancy, and other demographic characteristics. The study outcomes were suboptimal breastfeeding practices, which included "delayed initiation" and "nonexclusive" breastfeeding practices. In accordance with the WHO Infant and Young Child Feeding indicators, we defined "delayed initiation" practice as when a mother did not start breastfeeding her child within 1 hour of delivery and "nonexclusive" practice as when a mother did not breastfeed her child exclusively for 6 months without supplementation (eg, infant formula or other mother's milk supplements). Based on the existing literature, we identified 13 independent variables that could

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