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Barriers to Optimal Breastfeeding in Rural Indonesia

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Abstract

Background: Despite its importance, the rate of exclusive breastfeeding for the first 6 months of life in Indonesia was only 42% as recently as 2012.

Objective: This study examines determinants of breastfeeding behaviors in rural Indonesia.

Methods: We conducted a cross-sectional survey among 2086 women 14-55 years of age, living in seven regions of Indonesia.

Results: Participating mothers had an average age of 28 years old and had 1.9 children on average. Girls (64% vs. 58.2%) were more likely to be breastfed in the first hour of birth than boys (OR=1.268; 95% CI 1.062-1.515). Boys breastfed for an average of 6.4 months, compared to 9.2 months for girls. Nearly half (48.9%, 500/1023) of boys received foods other than breastmilk within the first three days of life, compared to 40.0% (425/1063) of girls. The belief that boys need better nutrition than girls (OR=0.706; 95% CI 0.572-0.872) was associated with lack of exclusive breastfeeding in the first 3 days of life.

Conclusions: Our findings indicate differential exclusive breastfeeding behaviors for male and female children. Health communication strategies promoting optimal breastfeeding behaviors, attitudes and beliefs related to gender and breastfeeding are needed. Addressing cultural practices that contribute to non-exclusive breastfeeding for the first 6 months of life is essential for stainable behavior change.

Keywords: Barriers; Breastfeeding; Exclusive Breast Feeding (EBF); Gender; Indonesia

Introduction

While breastfeeding has long been considered an important part of optimal infant nutrition, the World Health Organization (WHO) reports that, worldwide, only 40% of infants are exclusively breastfed until 6 months of age and only 23 countries have Exclusive Breast Feeding (EBF) rates over 60% [1]. Notwithstanding government efforts to implement international guidelines, rates of EBF in the first six months of life remain low in Indonesia, where in 2012 the rate of EBF in Indonesia was 42% [2]. Breastmilk contains all the nutrients a baby under 6 months of age needs to grow and thrive, and is protective against a multitude of diseases and poor growth, such as stunting, which impacts approximately 37% of children less than five in Indonesia [3,1].

Although rates of EBF in babies younger than six months increased from 32% in 2007 to 42% in 2012 [4], health experts say that formula companies continue to promote breastmilk substitutes with mothers of young infants [2]. The average duration of EBF is just over three months [4]. Contributing to this is a general lack of knowledge [2]. IMA World Health reports that mother's knowledge of EBF is low and the perception that formula milk is as healthy for a baby as breastmilk persists [5].

Mother's knowledge and beliefs, support from the baby's father, and local cultural beliefs have been identified as factors influencing decisions about breastfeeding and child nutrition [2,6,7]. To date, however, there remains a gap in research examining reasons behind the decision to breastfeed in rural Indonesia. In particular,

little is known about gender-related barriers to breastfeeding. The purpose of this study is to examine factors and barriers influencing breastfeeding behaviors of rural Indonesian mothers, including those related to the child gender.

Materials & Methods

Theoretical Framework

This study used established theoretical constructs to identify specific determinants and measurements likely to have the greatest impact on EBF behaviors among Indonesian mothers. Interventions integrating behavior change models and theoretical constructs supportive of health behavior have been shown to be most effective [8]. The current study applied two leading health behaviors change theories to understand the gender-specific barriers associated with EBF among mothers in Indonesia, the Social Ecological Model (SEM) and Health Belief Model (HBM). SEM emphasizes the impact that environment, community, and policy have on behavior while simultaneously examining intrapersonal and interpersonal influences of behavior, including psychological, biological, social and cultural factors [9]. The HBM examines the relationship between perceived susceptibility, perceived severity, perceived benefits, and perceived barriers, the combination of which provides the force towards individual health behavior motivation and action [10]. Both the SEM and HBM can be used to help understand the interplay between various determinants of breastfeeding behavior.

Design, Procedure & Sample

This study consisted of a cross-sectional survey to assess nutrition-related beliefs, practices, attitudes and behaviors of women living in rural Indonesia who have at least one child younger than two years of age. A team of experienced interviewers in Indonesia administered the survey to eligible women within their homes. The survey was administered using a structured interview guide to ask questions and collect responses during the 60-minute face-to-face interview. Participants' responses were recorded on the actual interview guide and were later transferred to an electronic database for data cleaning and analyses. In total, 2100 women in 7 regions of Indonesia (300 respondents per region) completed the survey. Fourteen women were excluded from the final analysis due to nonsensical data on respondent age. The final sample consisted of 2086 women between the ages of 14 and 55.

Measurement

Respondents answered structured interview questions about their demographics (e.g., age, location of residence, education, occupational status, number of household members, etc.) and their child under the age of two years old (e.g., age, gender). Respondents were also asked to report if they had certain material possessions, namely: electricity, radio, telephone, mobile phone, refrigerator, TV, bicycle/canoe, motorcycle/motorboat, car/truck, and computer/laptop. A wealth index variable was created to assess the material wealth of respondents based on their responses. To create the wealth index variable, each of these items was assigned a value of one for "yes" responses. The items were tallied to create a total wealth index score out of 10.

The structured interview included items designed to measure specific attitudes and beliefs related to breastfeeding and gender equality. Mothers were also asked about their experiences with breastfeeding (e.g., whether their child was breastfed, if the child received colostrum, how soon after birth breastfeeding was initiated, length of time the child was breastfed, and if the child received food other than breastmilk in the first three days of life). Finally, respondents were asked whether they agree or disagree with several statements, including the following: "breastmilk is enough to meet baby's nutrition up to 6 months old", "because husband is responsible to sustain the family, he does not need to help his wife take care of their children", and "boy child needs better nutrition than girl child".

Statistical Analysis

SAS version 9.4 was used to calculate all statistics. Descriptive statistics were calculated for all demographic variables related to both respondents and their children less than two years of age. Multiple logistic regression was used to identify factors associated with breastfeeding behaviors, including how long the child was breastfed, whether breastfeeding was initiated within one hour of birth, and whether the child received food other than breastmilk in the first three days of life. Regression models were adjusted for: age of the mother, education of the mother, employment status of the mother, age and child gender, opinions on the aforementioned statements regarding breastmilk sufficiency, roles of fathers, and gender-based nutrition needs, and wealth index scores. The predetermined level of significance for these analyses was established as $P<.05$. Potential correlates and confounding variables for the logistic regression models were chosen based on SEM constructs, which emphasize that individual behaviors are influenced by more than just intrapersonal beliefs and practices, including interpersonal factors such as family, culture and community [11].

Results

The average age of mothers was 28 years, with an average of 1.9 children per mother (Table 1). The majority (63.9%) of mothers had received at least a primary school education and approximately 10 percent were working. The average household wealth index score was 3.8. The average age of children of the study participants was 10.7 months for both males and females. Just over half of the children were female (51.0%).

Variable	Total (N=2086)
MOTHER	N (%)
Age (in years)	28.0 (6.5)*
Number of Children	1.9 (1.1)*
Education Level	
Some College	160 (7.7)
High School Graduate	526 (25.2)
Primary School Graduate	1333 (63.9)
No School	67 (3.2)
Working	216 (10.4)
Child	
Age of Child (in months)	
Male	10.70 (6.4)*
Female	10.73 (6.7)*
Female	1063 (51.0)
Household Variables	
Number of Family Members	4.6 (1.5)*
Wealth Index Score	3.8 (1.6)*
* indicates mean (standard deviation); all other values are N (%)	

Table 1: Demographic Data for Participants and their Children.

More than half of both males (58.2%) and females (64.0%) were reported to be breastfed within one hour of birth (Table 2). The average length of time males was breastfed was 6.4 months, while females were breastfed for an average of 9.2 months. Nearly fifty percent (48.9%) of males received food or drink other than breastmilk within the first three days of life, and 40.0% of females received food or drink other than breastmilk within the first three days of life. Significant differences were identified between males and females, specifically on the "child was ever breastfed" variable (p=0.0007) and the "child received food other than breastmilk in the first 3 days of life" variable (p=0.0002).

Variable	Male N=1023	Female N=1063	Total N=2086	P-Value
Ever Breastfed	966 (94.4)	1035 (97.4)	2001 (95.9)	0.0007
Immediate Initiation of Breastfeeding after Birth	595 (58.2)	680 (64.0)	1275 (61.1)	0.2772
Received Colostrum	793 (82.1)	878 (84.8)	1671 (83.5)	0.2546
Still Breastfeeding	817 (84.6)	887 (85.7)	1704 (85.2)	0.4794
Number of Months Baby was Breastfed if not Still Breastfeeding	6.4 (8.9)*	9.2 (14.8)*	7.8 (12.2)*	0.0532
Received Food or Drink Other than Breastmilk in First 3 Days of Life	500 (48.9)	425 (40.0)	925 (44.3)	0.0002
Food Given in First 3 Days of Life				
Breastmilk Only	305 (60.8)	273 (64.1)	578 (62.3)	0.2973
Formula	324 (64.5)	237 (55.6)	561 (60.5)	0.0057
Other Milk	10 (2.0)	3 (0.7)	13 (1.4)	0.0962
Other Liquid	193 (18.9)	175 (16.5)	368 (17.6)	0.15
Solid Food	102 (10.0)	116 (11.0)	218 (10.5)	0.4821
* indicates mean (standard deviation); all other values are N (%)				

Table 2: Breastfeeding Behavior Outcomes.

Being a female child was the only variable significantly associated with increased odds of early initiation of breastfeeding (OR=1.27; 95% CI 1.06-1.52) (Table 3).

	Unadjusted			Adjusted		
Predictor Variable	OR	CI	P-Value	OR	CI	P-Value
Age of Mother	1	0.99-1.02	0.5414	1	0.99-1.02	0.6025
Education of Mother						
College Education	0.9	0.51-1.59	0.7076	0.88	0.49-1.60	0.6741
High School Education	1.15	0.69-1.91	0.6028	1.15	0.68-1.94	0.6019
Some Education	1.41	0.86-2.31	0.1744	1.47	0.89-2.42	0.1348
Mother not Working	1.05	0.78-1.39	0.7647	0.95	0.70-1.28	0.7176
Age of Child	1.01	0.99-1.02	0.3221	1.01	0.99-1.02	0.3682
Gender of Child (female)	1.28	1.07-1.52	0.0066	1.27	1.06-1.52	0.0088
Belief that breastmilk is sufficient for first 6 months of life	1.18	0.95-1.46	0.1364	1.18	0.95-1.46	0.1371
Belief that husband does not need to help with childcare	1	0.84-1.20	0.9862	1.01	0.83-1.22	0.9486
Belief that boys need better nutrition than girls	0.88	0.72-1.08	0.2172	0.86	0.69-1.06	0.1517
Wealth Index	1	0.94-1.05	0.8848	1.02	0.96-1.08	0.5607

Table 3: Correlates of Initiating Breastfeeding within One Hour of Birth.

Three variables were significantly associated with increased odds that a child is still being breastfed (Table 4): Increased age of the mother (OR=1.03; 95% CI 1.00-1.05), the perception that breastmilk alone is sufficient nutrition for the baby for the first 6 months (OR=1.60; 95% CI 1.19-2.17), and the mother not working (OR=1.62; 95% CI 1.11-2.37) were significantly associated with increased odds that a child is still being breastfed (Table 4). Inversely, increased age of the child (OR=0.91; 95% CI 0.89-0.93) and increased wealth index (OR=0.81; 95% CI 0.75-0.88) were significantly associated with decreased odds that a child is still being breastfed.

	Unadjusted			Adjusted		
Predictor Variable	**OR**	**CI**	**P-Value**	**OR**	**CI**	**P-Value**
Age of Mother	1.01	0.99-1.03	0.3818	1.03	1.00-1.05	0.0224
Education of Mother						
College Education	0.36	0.16-0.82	0.0148	0.46	0.19-1.12	0.0864
High School Education	0.59	0.27-1.28	0.1815	0.69	0.31-1.54	0.3594
Some Education	1.09	0.51-2.32	0.8321	1.15	0.52-2.52	0.7347
Mother not Working	2.19	1.56-3.07	<0.0001	1.62	1.12-2.37	0.0135
Age of Child	0.92	0.90-0.94	<0.0001	0.91	0.89-0.93	<0.0001
Gender of Child (female)	1.09	0.85-1.40	0.4795	1.07	0.83-1.39	0.607
Belief that breastmilk is sufficient for first 6 months of life	1.48	1.11-1.96	0.0072	1.6	1.19-2.17	0.0021
Belief that husband does not need to help with childcare	1.22	0.94-1.57	0.1315	0.99	0.85-1.32	0.9585
Belief that boys need better nutrition than girls	1.13	0.84-1.50	0.4221	0.96	0.70-1.32	0.7941
Wealth Index	0.79	0.73-0.85	<0.0001	0.81	0.75-0.88	<0.0001

Table 4: Correlates of the Child Still Being Breastfed.

The belief that boys need better nutrition than girls was associated with decreased odds that the child was exclusively breastfed during the first 3 days of life (OR=0.71; 95% CI 0.57-0.87) (Table 5). Two variables were significantly associated with increased odds that the child was exclusively breastfed during the first 3 days of life: if the child was female (OR=1.38; 95% CI 1.16-1.65), and the

perception that breastmilk is sufficient nutrition for the baby for the first 6 months of life (OR=1.61; 95% CI 1.29-1.99).

	Unadjusted			Adjusted		
Predictor Variable	**OR**	**CI**	**P-Value**	**OR**	**CI**	**P-Value**
Age of Mother	1	0.99-1.02	0.5121	1.01	0.99-1.02	0.5174
Education of Mother						
College Education	0.56	0.31-1.00	0.0512	0.61	0.33-1.13	0.1176
High School Education	0.72	0.43-1.22	0.2258	0.75	0.43-1.28	0.2852
Some Education	0.77	0.46-1.28	0.3083	0.81	0.48-1.35	0.4143
Mother not Working	1.05	0.78-1.40	0.7594	1.15	0.85-1.55	0.3579
Age of Child	1.01	1.00-1.02	0.165	1.01	1.00-1.02	0.224
Gender of Child (female)	1.44	1.21-1.71	<0.0001	1.38	1.16-1.65	0.0003
Belief that breastmilk is sufficient for first 6 months of life	1.59	1.29-1.97	<0.0001	1.61	1.29-1.99	<0.0001
Belief that husband does not need to help with childcare	0.96	0.80-1.14	0.637	0.99	0.82-1.20	0.9082
Belief that boys need better nutrition than girls	0.74	0.60-0.90	0.0023	0.71	0.57-0.87	0.0012
Wealth Index	0.95	0.90-1.00	0.0622	0.96	0.91-1.02	0.1489

Table 5: Correlates of Exclusive Breastfeeding during the First Three Days of Life.

Discussion

This study demonstrates that attitudes and beliefs have both favorable and adverse effects on breastfeeding behaviors. Child gender was identified as a significant predictor of both early initiation of breastfeeding and if the child did not receive food other than breastmilk in the first three days of life. As found in previous studies, other influencing factors include age of mother [12], age of child [13], wealth index [14], and breastfeeding perceptions [15], including the belief that breastmilk alone is sufficient nutrition for the first 6 months, and the belief that boys need better nutrition than girls.

In the current study, female children were more likely to be breastfed within one hour of birth than male children. Previous research in India found no differentiation of early breastfeeding initiation post-birth based on gender [16]. However, at least one study found that in cultures with a strong male preference, girls are often more likely than boys to still be exclusively breastfed at 6-9 months [17]. This practice is thus nutritionally beneficial to girls [17], which may explain the study results found in rural Indonesia and may reflect an erroneous belief that breastfeeding is inferior to other feeding practices. A study in Northern India concluded that delays in early initiation of breastfeeding were not based on gender or gender preference, but were instead due to family-related restrictions, social customs, and religious beliefs [18]. A similar study in rural Senegal found that boys were more likely to receive early complementary feeding than girls [15]. These findings were reinforced by the current study, which found that girls are less likely to receive solid food than boys in the first 3 days of life. Findings that girls are more likely to be breastfed within one hour of life and are less likely to receive solid food within the first 3 days of life may result from specific cultural or religious beliefs and practices surrounding birth in Indonesia that vary according to child gender. Further research is needed to explore this hypothesis.

Several factors were associated with continued breastfeeding. Older mothers and mothers that did not work outside the home were more likely to still be breastfeeding their babies of both sexes. Another factor that increased the rate of continued breastfeeding was the belief that breastmilk was sufficient nutrition for the first six months of life. On the other hand, an older child and families with a higher wealth index were factors that contributed to decreases in continued breastfeeding. Previous research has also shown that as children get older, they are less likely to still be breastfed [13]. These findings are in line with research from Indonesia showing a relationship between wealthier families, working parents, and delayed initiation of and non-EBF [14]. It is possible that families with more wealth are able to provide more supplementary foods and, therefore, discontinue breastfeeding earlier. Further research should be done to explore this issue.

In this study, female children were less likely to be given food other than breastmilk in the first 3 days of life. This behavior appears to be directly related to a belief that boys need better nutrition than girls and thus do not merit complementary feeding in the first 3 days of life. Previous research in South India found that doctors play a significant role in influencing mothers about whether to supplement breastmilk with formula [19]. Another study linked the feeding of complementary foods within the first 3 days of life to religious and cultural practices [20]. Some of the perceived benefits of this early complementary feeding among religious groups include cleaning baby's bowels, keeping the body warm, promoting growth, and soothing the baby [20]. The major

concern associated with giving complementary food is that the baby will receive less breastmilk, which can lead to decreases in maternal milk supply and production, in turn resulting in a shorter period of breastfeeding, and ultimately leading to undernutrition and stunting [21]. Additional studies are needed to further explore the reasons behind the belief that boys need more nutrition than girls and how to address cultural norms that lead to gender-related discriminatory feeding patterns.

This study has several limitations. The data is cross-sectional and therefore does not allow for determination of causality. Also, the items in the wealth index are not of the same monetary or functional value. For example, items like a computer or a car are much more expensive than a radio or a telephone. In addition, bikes or boats may provide transportation, but do not provide information and education as radios or televisions could. The number of items a family had was used to determine wealth because it was the best available measure of each family's wealth. Additionally, although researchers had data on the number of months the baby was breastfed, the data did not specify if breastfeeding was exclusive. This data would have helped determine barriers to EBF for the first 6 months. Another limitation was the lack of data on beliefs and attitudes of the father and other family members regarding breastfeeding and gender equality. Family attitudes and beliefs could be another variable related to exclusive and continued breastfeeding. Despite these limitations, this study provides valuable insights related to how attitudes, beliefs, and gender impact breastfeeding practices among a large cross-sectional sample of mothers in rural Indonesia.

Conclusion and Recommendations

Child gender is significantly related to early initiation of breastfeeding, and if the child did not receive food other than breastmilk in the first 3 days of life. Delayed initiation of breastfeeding and supplementary feeding practices is concerning because they contribute to morbidity and mortality among infants and children [22].

Improving optimal breastfeeding behaviors in rural Indonesia should continue to be a public health priority. Health communication strategies targeting optimal breastfeeding behaviors, together with attitudes and beliefs related to infant gender and breastfeeding are recommended. Addressing social norms, and religious and cultural practices that contribute to non-EBF for the first 6 months of life, are likewise central to informing sustainable behavior change. Potential interventions focused on behavior change models like the SEM and HBM will ensure the sustainability of the behavior. Several potential interventions exist to improve breastfeeding practices in rural Indonesia that integrate concepts of the SEM and HBM. These include the following:

- Education targeting mothers and the general community about the importance of EBF for the first 6 months of life, including information on the sufficiency of breastmilk for complete nutrition and the prevention of negative health outcomes such as stunting.
- Education targeting mothers and the general community about the dangers of supplemental feeding prior to 6 months of age for infants.
- Education targeting mothers and the general community related to gender equality, specifically targeting the idea that boys and girls need the same nutrition.
- Working with traditional birth attendants, midwives and other health care providers to deliver the above educational interventions in order to increase the self-efficacy of mothers toward optimal breastfeeding behaviors.

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References

1. World Health Organization (2017) Babies and mothers worldwide failed by lack of investment in breastfeeding. Saudi Medical Journal 38: 974-975.
2. Shetty P (2014) Indonesia's breastfeeding challenge is echoed the world over. World Health Organization. Bull World Health Organ 92: 234.
3. Blaney S, Februhartanty J, Sukotjo S (2015) Feeding practices among Indonesian children above six months of age: a literature review on their magnitude and quality (part 1). Asia Pac J Clin Nutr 24: 16-27.
4. Indonesia S (2012) National Population and Family Planning Board (BKKBN), and Kementerian Kesehatan (Kemenkes-MOH), and ICF International. 2013. Indonesia Demographic and Health Survey 2012.
5. IMA World Health (2015) 2015 IMA Annual Report.
6. Kong Sarah KF, Lee Diana TF (2004) Factors influencing decision to breastfeed. Journal of Advanced Nursing 46: 369-379.
7. Osman H, El Zein L, Wick L (2009) Cultural beliefs that may discourage breastfeeding among Lebanese women: a qualitative analysis. Int Breastfeed J 4: 12.
8. Glanz K (2015) Health behavior: Theory, research, and practice: John Wiley & Sons.
9. Sallis JF, Owen N, Fisher E (2015) Ecological models of health behavior. Health behavior: theory, research, and practice. 5th ed. San Francisco: Jossey-Bass 43-64.
10. Janz NK, Becker MH (1984) The Health Belief Model: a decade later. Health Educ Q 11: 1-47.
11. Rosenstock IM, Strecher VJ, Becke MH (1988) Social learning theory and the Health Belief Model. Health Educ Q 15: 175-183.
12. Lawal AM, Idemudia ES (2017) Examining maternal age, breastfeed-

ing self-efficacy and health locus of control in psychological wellbeing of mothers. Psychol Health Med 22: 1230-1238.

13. Oche MO, Umar AS, Ahmed H (2011) Knowledge and practice of exclusive breastfeeding in Kware, Nigeria. Afr Health Sci 11: 518-523.

14. Bork KA, Diallo A (2017) Boys Are More Stunted than Girls from Early Infancy to 3 Years of Age in Rural Senegal. J Nutr 147: 940-947.

15. Raman S, Srinivasan K, Kurpad A, Razee H, Ritchie J (2014) "Nothing Special, Everything Is Maamuli": Socio-Cultural and Family Practices Influencing the Perinatal Period in Urban India. PLOS ONE 9: e111900.

16. Mishra V, Roy TK, Retherford RD (2004) Sex differentials in childhood feeding, health care, and nutritional status in India. Population and Development Review 30: 269-295.

17. Kumar D, Agarwal N, Swami HM (2006) Socio-demographic correlates of breast-feeding in urban slums of Chandigarh. Indian J Med Sci 60: 461-466.

18. Titaley CR, Loh PC, Prasetyo S, Ariawan I, Shankar AH (2014) Socio-economic factors and use of maternal health services are associated with delayed initiation and non-exclusive breastfeeding in Indonesia: secondary analysis of Indonesia Demographic and Health Surveys 2002/2003 and 2007. Asia Pac J Clin Nutr 23: 91-104.

19. Fidler K, Costello A (1995) The role of doctors in influencing infant feeding practices in South India. Tropical doctor 25: 178-180.

20. McKenna KM, Shankar RT (2009) The practice of prelacteal feeding to newborns among Hindu and Muslim families. Journal of midwifery & women's health 54: 78-81.

21. Inayati DA, Scherbaum V, Purwestri RC, Hormann E, Wirawan NN, et al. (2012) Infant feeding practices among mildly wasted children: a retrospective study on Nias Island, Indonesia. Int Breastfeed J 7: 3.

22. Edmond KM, Zandoh C, Quigley MA, Amenga-Etego S, Owusu-Agyei S, et al. (2006) Delayed breastfeeding initiation increases risk of neonatal mortality. Pediatrics 117: e380-e386.