

# Breastfeeding practices and knowledge in Indonesia



Breastfeeding has important benefits for babies and mothers, such as improved survival, nourishment, immunological support, and parent/child bonding (Chowdhury et al. 2015; Papp 2014; Victora et al. 2014; Bahl et al. 2007; Bhutta et al. 2008). Therefore, UNICEF and the WHO recommend early initiation of breastfeeding (within the first hour after birth), exclusive breastfeeding until 6 months, and continued breastfeeding at least until age 2 (WHO 2010).

According to the 2012 Indonesia Demographic and Health Survey (DHS), breastfeeding was almost universal, with over 96 percent of children in the country being breastfed at some point. However, only 42 percent of children 0-5 months were exclusively breastfed.

In this brief we take a detailed look at breastfeeding practices and knowledge in the first two years of life among caregivers of children 0-35 months old in rural areas of Central Kalimantan, West Kalimantan, and South Sumatra in Indonesia. We also examine correlates of exclusive breastfeeding.

## BREASTFEEDING PRACTICES

We find low rates of early initiation, low rates of exclusive breastfeeding, and high rates of ever and persistent breastfeeding.

**Only a third of women initiated breastfeeding within one hour of birth.** Early initiation—defined as the infant being breastfed within one hour of birth—was low at 34 percent. This rate almost doubled over the course of the first 24 hours after birth, increasing to 64 percent of infants having been breastfed; by 48 hours after birth, 76 percent of infants had been breastfed. (See page 2 for a discussion of breastfeeding definitions.)

**Rates of exclusive breastfeeding were low.** As shown in Figure 1, 20 percent of children were exclusively breastfed for a full six months. A small proportion of children start out being exclusively breastfed and an even smaller proportion are exclusively breastfed five months. Figure 2 shows that only 23 percent of caregivers of children in their first month of life reported that the child was still exclusively breastfed, and the proportion of children who were still exclusively breastfeeding fell to only 13 percent among children 5 months old.

**Nearly all children received breastmilk, and the majority of children were breastfed until age 2.** Ninety-six percent of children were breastfed at some point in their lives. As shown in Figure 3, nearly all newborns were breastfeeding. Among 6 month olds, this figure was over 80 percent. High proportions of women breastfed up to two years. Among children over age 2, the median duration of breastfeeding was 18 months. Figure 3 shows that at age 2, approximately 60 percent of children were still breastfeeding.



Photo courtesy of <http://www.gizitingg.org/>

## ABOUT THE DATASET

Data used in this analysis are from a baseline survey for a cluster-randomized controlled trial of a nutrition program implemented by the Government of Indonesia and the Millennium Challenge Account-Indonesia, funded by the Millennium Challenge Corporation. The survey was conducted in late 2014 and early 2015 in the provinces of South Sumatra, Central Kalimantan, and West Kalimantan. The survey is representative of caregivers of children ages 0-35 months in 190 kecamatan (subdistricts) that are the trial clusters. The household survey, administered to 3,034 caregivers, includes modules about household characteristics, health service access and utilization, feeding practices, and caregivers' knowledge of recommended feeding practices. Household data are complemented by data from health facility staff, community health workers, and midwives in the 190 kecamatan.



*NOTE: All comparisons of breastfeeding rates across groups were estimated using multivariate Poisson regressions with controls for each child's age, gender, socioeconomic background, and province, with standard errors clustered by kecamatan. All comparisons of breastfeeding duration across groups were estimated using multivariate OLS regressions with the same controls and standard errors clustered by kecamatan.*

## DEFINING EXCLUSIVE BREASTFEEDING

Researchers and policymakers would ideally measure exclusive breastfeeding using very precise data on feeding practices in an infant's first six months of life, such as a daily inventory of everything the infant consumed. However, such data are impractical and expensive to collect. There are several more feasible, second-best measurement solutions.

The WHO defines exclusive breastfeeding as an infant 0-5 months old only receiving breastmilk during the previous day, except for oral rehydration salts or other medicine (WHO 2010). This has the advantage of avoiding recall error problems, but the limitation that it could significantly overestimate the proportion of babies who were exclusively breastfed because in practice babies' consumption of various liquids may change from day to day.

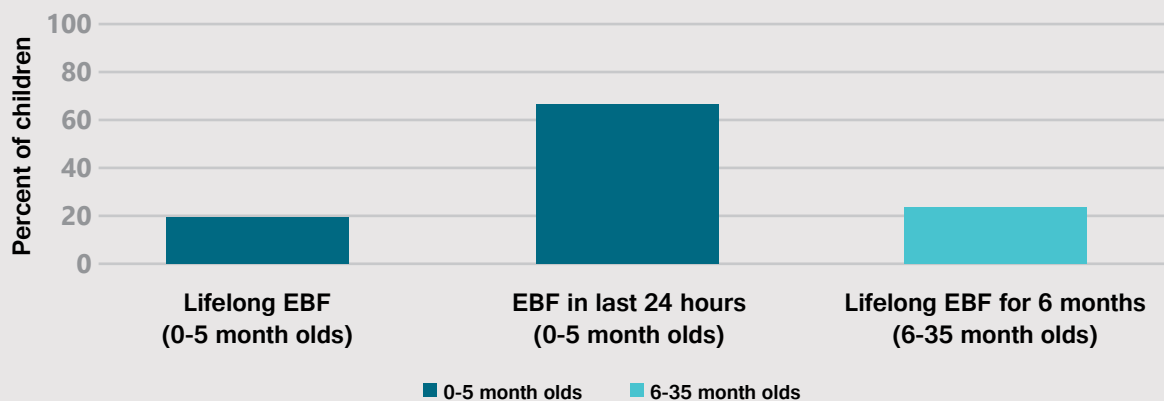
Alternatively, the "lifelong" approach focuses on the age at which infants or young children first received a variety of liquids (including water) and solid foods to measure the duration of exclusive breastfeeding (Greiner 2014). This approach can be used to define exclusive breastfeeding as not receiving any liquids other than breastmilk for the full six months. This approach allows researchers to assess adherence with the WHO recommendation since it offers a full picture of what the infant has been consuming over the course of six months. However, this approach has the disadvantage of caregivers' potential recall error about what a child consumed over this time frame. The WHO approach avoids this problem by only asking caregivers about the previous 24 hours.

The lifelong six-month definition also doesn't consider how much nearly exclusive breastfeeding is happening because an infant is no longer considered exclusively breastfed if he or she receives any liquid or food other than breastmilk, including formula, before six months.

In Figure 1 we show the large differences in the findings from our data using these two definitions. Using the WHO 24 hour definition, 65 percent of 0-5 month olds were considered exclusively breastfed. This is substantially higher than the DHS estimate for all of Indonesia, which uses the 24 hour definition for 0-5 month olds. The DHS reported a national exclusive breastfeeding rate of 42 percent. Using the lifelong definition, we find similar rates of exclusive breastfeeding among the 0-5 months and 6-35 month old samples of around 20 percent, which suggests that caregivers of older children had a similar ability to recall when they first introduced something other than breastmilk into their child's diet. (We use the 0-5 month old group to examine whether child is currently breastfeeding or has been breastfeeding since birth. The 6-35 month old group allows us to assess adherence with the WHO recommendation of exclusive breastfeeding for the full six months. One can only examine adherence after a child has completed his or her fifth month.)

We use the lifelong definition of exclusive breastfeeding throughout this brief because this more conservative measure more accurately captures the policy objectives that the project we are evaluating is trying to achieve, namely encouraging mothers to provide nothing other than breastmilk for the first six months of life. Specifically this means that the majority of this analysis in this brief draws on reports from caregivers of 6-35 month olds. The survey asks them retrospective questions about their feeding practices. We note it in the text if we use a definition other than the full six-month lifelong definition.

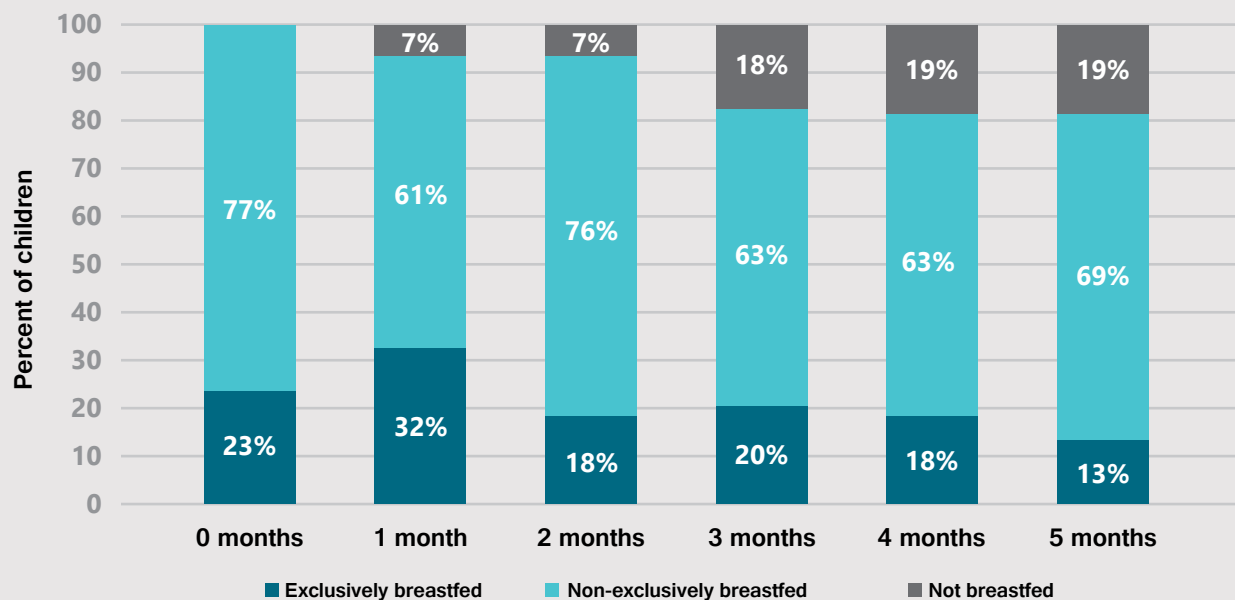
**FIGURE 1: THERE IS A 25 PERCENTAGE POINT DIFFERENCE BETWEEN RATES OF EXCLUSIVE BREASTFEEDING (EBF) BASED ON THE PAST 24 HOURS AND LIFELONG PRACTICE**



**Formula use was common across all age groups.** At the time of the survey, nearly 40 percent of children in the first month of life were receiving formula; an additional 20 percent of children in the first month had received formula (perhaps as a prelacteal supplement for breastmilk) but were no longer receiving it by the time of the survey (not shown). Among children age 0-24 months old, roughly a third were

receiving formula regularly (Figure 3). Formula is a beneficial and nutritious alternative to breastmilk. We highlight its use here because formula mixed with contaminated water could be harmful to infants and young children. In this study, 90 percent of caregivers reported using powdered formula, which suggests that among this population, there is a substantial potential risk of exposure to contaminated water.

**FIGURE 2: EXCLUSIVE BREASTFEEDING RATES WERE LOW AMONG 0-5 MONTH OLDS**



**Many infants consumed solid foods regularly before the recommended age.** Formula use alone cannot explain the low rate of exclusive breastfeeding. Figure 3 shows the proportion of children receiving solid or semi-solid foods regularly. A quarter of 3 month olds and 61 percent of 5 month olds were receiving food regularly at the time of the survey.

**Half of children had received liquids and solids other than breastmilk and formula before 6 months.** Figure 3 shows that a quarter of 3 month olds were receiving solid or semi-solid food regularly. This does not include the occasional exposure to food or liquids. Nearly half of children had been exposed to solids or liquids other than breastmilk or formula before 6 months (Figure 4). Nearly 60 percent of 2 and 3 month-old children consumed liquids other than breastmilk or formula daily, and nearly half of caregivers introduced complementary feeding at 3 or 4 months (not shown). Figure 4 also shows that only 13 percent of children 6-35 months had received only breastmilk or formula in the first six months. This suggests that, as discussed above in the context of Figure 3, that complementary feeding is a bigger challenge to exclusive breastfeeding than formula.

**Prelacteal feeding is a potential explanation for why the rate of lifelong exclusive breastfeeding was low.** Since the lifelong definition of exclusive breastfeeding is based on whether the child ever consumed anything other than breastmilk for the first six months, prelacteal feeding, or the traditional practice of giving babies food or liquids other than breastmilk, such as honey water, immediately after birth, partially accounts for the low rate of lifelong exclusive breastfeeding. Almost half (47 percent) of children ages

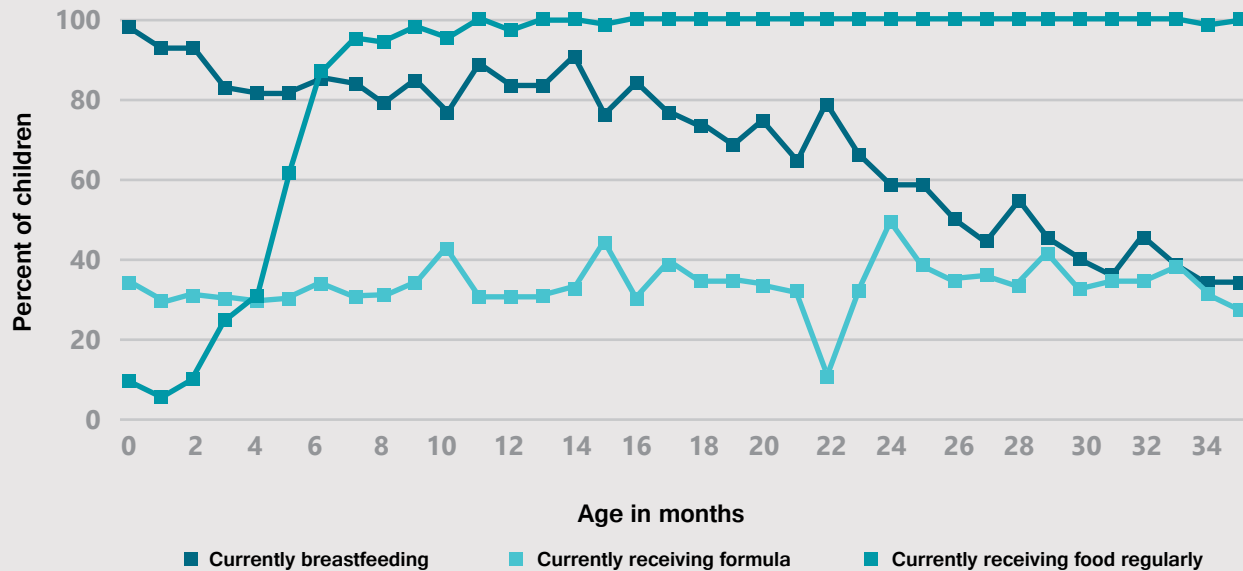
6-35 months were given a prelacteal feed, but many of these children did not receive food or liquids other than breastmilk regularly for the remainder of the first 6 months. Figure 4 shows that among all 6-35 month olds, 17 percent were given a prelacteal feed but were not regularly fed food or liquids other than breastmilk until six months or after.

## CHARACTERISTICS ASSOCIATED WITH EXCLUSIVE BREASTFEEDING

Acknowledging that the prevalence of exclusive breastfeeding for six months was low even though breastfeeding rates were high, we attempted to better understand what factors were correlated with exclusive breastfeeding and found several associations.

**Poor women were more likely to exclusively breastfeed and less likely to use formula.** We examined the relationship between a number of socioeconomic factors and feeding practices. Although women who did not complete junior high were not more likely to exclusively breastfeed until six months than women who were more educated, among those who exclusively breastfed, less educated women on average exclusively breastfed for nearly a month longer. Women in the lowest asset quintile had a 33 percent higher rate of exclusive breastfeeding than women in the highest asset quintile. Women in the lowest asset quintile were also less likely to use formula (by 39 percent), and more likely to mix breastfeeding with solids and liquids other than formula (by 34 percent). Beyond assets and education, there were no statistically significant relationships between the rate or duration of exclusive breastfeeding and other measures related to receiving government support in the form of social assistance, such as cash transfers or a rice subsidy, or the possession of health insurance.

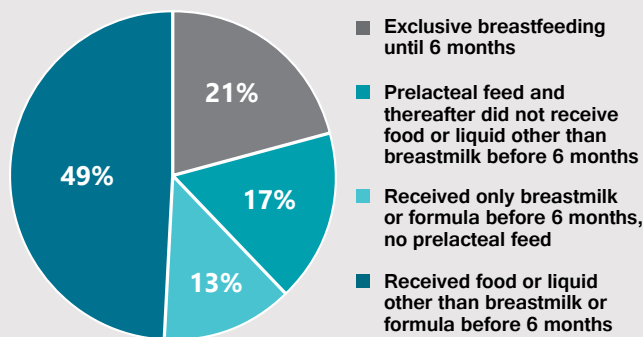
**FIGURE 3. BREASTFEEDING RATES WERE HIGH, FORMULA USE WAS COMMON ACROSS ALL AGE RANGES, AND MANY YOUNG CHILDREN RECEIVED FOOD REGULARLY BEFORE SIX MONTHS**



**Mothers' employment outside the home was not related to exclusive breastfeeding.** In this analysis, we use the 0-5 month old sample because we examine whether the mother was working during the timeframe of recommended exclusive breastfeeding, i.e. 0-5 months, and we do not have data on employment status among mothers of 6-35 month olds when their children were 0-5 months. We find that relatively few mothers of babies less than 6 months old in our sample were working outside the home (13 percent), and working was not associated with exclusively breastfeeding, so being away from the infant because of employment does not seem to affect the low rate of exclusive breastfeeding.

**Delivery with a skilled provider was negatively associated with exclusive breastfeeding and positively associated with prelacteal feeding.** In terms of health-care access, we find no relationship between exclusive breastfeeding and prenatal care or proximity to or cost of local health services at the puskesmas. However, there was an association between delivery provider and exclusive breastfeeding and prelacteal feeding. Women who did not deliver with a skilled provider were 40 percent more likely to exclusively breastfeed and exclusively breastfed for one month longer on average. Women who delivered with a skilled provider were 18 percent more likely to have had a prelacteal feed. We found no relationship between delivery with a skilled provider and early initiation.

**FIGURE 4: NEARLY HALF OF CHILDREN 6-35 MONTHS OLD WERE GIVEN FOOD OR LIQUIDS OTHER THAN BREASTMILK BEFORE SIX MONTHS**



## KNOWLEDGE OF BREASTFEEDING RECOMMENDATIONS

In addition to considering how women's background characteristics and healthcare utilization were related to breastfeeding, we also examined women's knowledge of recommended feeding practices for the first six months.

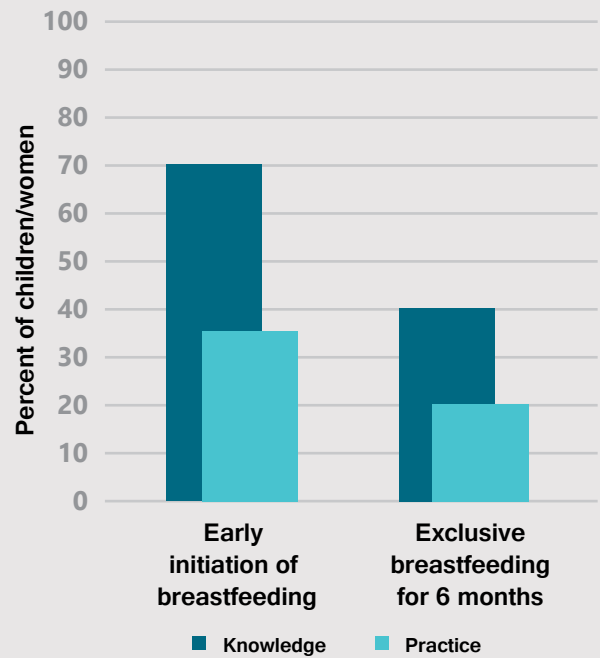
**Almost all caregivers knew that breastfeeding is beneficial.** Nearly 90 percent of respondents could volunteer at least one benefit of breastfeeding, with many respondents focusing on health benefits. However, very few respondents cited cost considerations – the fact that breastfeeding is much less expensive than formula.

**Less than half of all caregivers knew about the recommendation to practice exclusive breastfeeding for the first 6 months.** Not surprisingly, women who knew about exclusive breastfeeding were more than twice likely to practice it than women who did not know about the practice. However, there was still a gap between knowledge and practice (Figure 5) – 40 percent of women knew how long they should exclusively breastfeed for, but only 20 percent actually practiced exclusive breastfeeding. This suggests that greater knowledge of exclusive breastfeeding is necessary but not sufficient to increase exclusive breastfeeding rates. A similar gap between knowledge and practice existed for initiation of breastfeeding. Seventy percent of women were able to correctly answer a question about how long after birth a baby should start breastfeeding, but just over 30 percent reportedly followed this guideline.

**Early initiation knowledge was related to mother’s education, and exclusive breastfeeding knowledge was related to health care utilization.** Mothers who completed junior high were 15 percentage points more likely to be knowledgeable about when to initiate breastfeeding, but no more likely to be knowledgeable about exclusive breastfeeding than less educated women. Women who had greater exposure to some types of health care services were more likely to be knowledgeable about exclusive breastfeeding practices. Women who received the recommended number of prenatal visits, received delivery assistance from a skilled professional, and attended a class for expecting mothers (kelas ibu hamil) were more likely to know that a woman should exclusively breastfeed for six months (31, 33, and 32 percent more likely, respectively). However, women who received at least two postnatal visits were not more likely to know about appropriate exclusive breastfeeding practices.

It is puzzling that women who delivered with a skilled professional were more likely to know that a woman should exclusively breastfeed for six months, yet they were less likely to follow the recommendation. Although we have controlled for some

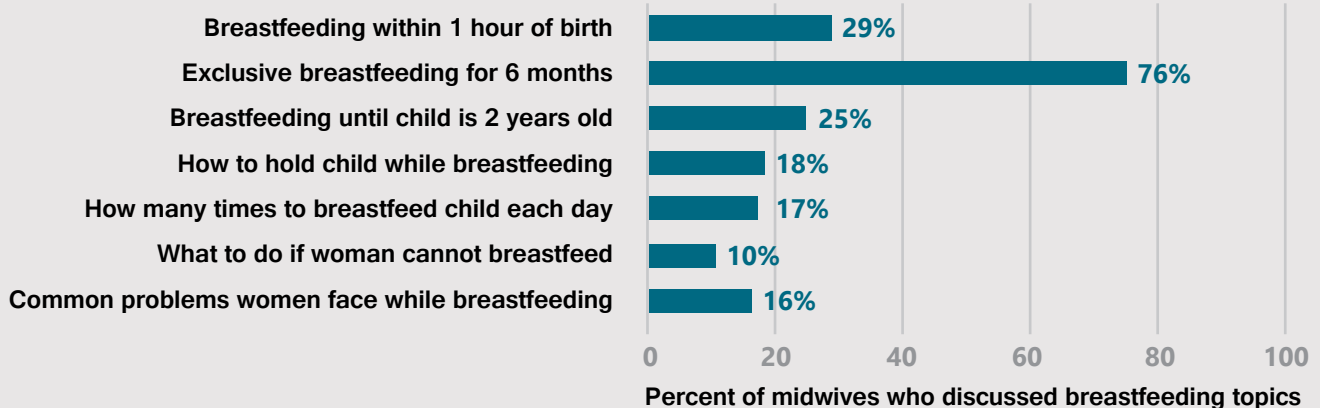
**FIGURE 5: MANY WOMEN DON’T CARRY OUT BEST PRACTICE EVEN IF THEY KNOW WHAT IT IS**



aspects of education and assets, it is possible that some other unobserved characteristics related to having a skilled professional at the delivery could explain this apparent contradiction.

**Midwives could do more to support breastfeeding.** The majority of nutritionists, midwives, and community health volunteers reported talking with pregnant women and caregivers about breastfeeding (70 percent, 96 percent, and 62 percent, respectively). (Approximately 45 percent of caregivers cited the village midwife as their primary source for advice about general child health and feeding questions).

**FIGURE 6: MOST MIDWIVES DISCUSSED EXCLUSIVE BREASTFEEDING WITH CAREGIVERS IN THE LAST SIX MONTHS, BUT LESS THAN A THIRD DISCUSSED OTHER IMPORTANT BREASTFEEDING TOPICS**



Looking into the specific topics they talked to pregnant women and caregivers about, it is a bit surprising that three-quarters of midwives reported discussing exclusive breastfeeding and less than a third discussed early initiation (Figure 6). Yet pregnant women (not shown) and caregivers (see Figure 5) were much more familiar with the need to start breastfeeding within the first hour after birth than they were with the need to feed nothing

but breastmilk for the first six months. Few midwives discussed topics related to breastfeeding other than exclusive breastfeeding. Fewer than one in five midwives discussed issues related to practicing breastfeeding such as how to hold the child while breastfeeding, how many times a day to breastfeed, common problems encountered with breastfeeding, or what to do if the mother cannot breastfeed.

## SUMMARY AND RECOMMENDATIONS

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Caregivers of young children in Indonesia exhibited high rates of breastfeeding and persistent breastfeeding. Nearly all children were breastfed in the first month of life; at six months nearly 80 percent of children were breastfed; and even at 35 months, 60 percent of children were breastfed. Yet the rate of exclusive breastfeeding was low. Only 23 percent of children were breastfed exclusively in the first month of life, and this figure dropped to 13 percent by 5 months.

In this brief we attempted to better understand infant feeding practices, for example the frequency and intensity of formula use, and introduction of liquids and solids other than breastmilk, and possible explanations for low rates of exclusive breastfeeding and early initiation. We found and recommend the following:

- Rates of exclusive breastfeeding differed based on whether one used the WHO definition (only breastmilk for the last 24 hours) versus the six-month lifelong definition (only breastmilk for the first six months). The WHO definition yielded an exclusive breastfeeding rate of 65 percent for children 0-5 months old, whereas the lifelong definition yielded a rate of 20 percent for this age group. In this brief we focus on the six-month lifelong definition because most policy discussions, including those led by MCA-Indonesia and MCC, focus on encouraging mothers to provide nothing other than breastmilk for the first six months of life.
- Health providers and communities should discourage prelacteal feeding. Seventeen percent of women breastfed exclusively except for the prelacteal feed. Offering these women more encouragement and education about the benefits of eliminating prelacteal feeding could substantially increase the share (from 21 to 38 percent) of children who are exclusively breastfed for their first six months of life.
- Because nearly half of children received food or liquid other than breastmilk or formula regularly before six months, breastfeeding promotion campaigns should focus on when it is appropriate to introduce complementary feeding. Formula use was common (about 30 percent use it regularly) and potentially crowded out some breastfeeding; but a potentially bigger problem was initiating liquids other than breastmilk or formula and food before six months.
- Poor women were more likely to exclusively breastfeed, yet they were also more likely to supplement breastfeeding with liquids or solids other than formula at an early age. (Meaning the poorest asset quintile used formula at lower rates than all other quintiles.) Thus poor women especially could benefit from support to continue exclusively breastfeeding before six months.
- Further research is needed about the association between delivery with a skilled provider and lower rates of exclusive breastfeeding. This is a discouraging finding as health providers are hopefully strongly encouraging recommended practices.
- There is scope for most caregivers to learn about exclusive breastfeeding. While most caregivers knew that breastfeeding was beneficial, less than half of them knew about the recommendation to practice exclusive breastfeeding for six months.
- However, it is clear that knowledge is not sufficient because women often did not practice exclusive breastfeeding or waiting until 6 months for complementary feeding, even if they knew the benefits. Health providers and communities could do more not only to educate women about recommended practices, but also support them in practicing exclusive breastfeeding. Midwives especially could expand the focus on offering advice to support specific challenges women experience when breastfeeding.

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