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Maternal employment status and early initiation of breastfeeding in Indonesian urban areas

Weny Lestari[1]*, Nailul Izza[2], Lusi Kristiana[3], Herti Maryani[1], Pramita Andarwati[4], Astridya Paramita[2], Agung Dwi Laksono[2]

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[1]Research Center for Population, National Research and Innovation Agency Republic of Indonesia

[2]Research Center for Public Health and Nutrition, National Research and Innovation Agency Republic of Indonesia

[3]Research Center for Pharmaceutical Ingredients and Traditional Medicine, National Research and Innovation Agency Republic of Indonesia

[4]Research Center for Pre-Clinical and Clinical Medicine, National Research and Innovation Agency Republic of Indonesia

***Correspondence:**
weny716@gmail.com

Abstract

Purpose: The first human milk produced contains highly nutritious colostrum and antibodies that could protect newborns against disease. The study analysed the role of maternal employment status in achieving early initiation of breastfeeding in urban Indonesia. **Methods:** This cross-sectional study employed secondary data from the 2017 Indonesia Demographic and Health Survey. The study analyzed 36,163 women with children under 24 months old. The study used early initiation of breastfeeding as the outcome variable and maternal employment status as the exposure variable. Furthermore, the research employed ten control variables: maternal current marital status, age, education, parity, wealth, antenatal care, place of delivery, mode of delivery, type of birth, and child sex. The authors employed a binary logistic regression in the final test. **Results:** The study showed that unemployed mothers were 1.587 times more likely to experience early initiation of breastfeeding than employed mothers in urban Indonesia (AOR 1.587; 95% CI 1.509-1.669). The result indicated that maternal unemployment was a protective factor for the early initiation of breastfeeding in urban Indonesia. Moreover, the results also found that eight control variables were significantly correlated with the early initiation of breastfeeding: current maternal marital status, maternal age, maternal education level, parity, wealth status, antenatal care, place of delivery, and mode of delivery. **Conclusion:** The study found that maternal employment status correlates with the early initiation of breastfeeding in urban Indonesia. Maternal unemployment status was more likely to experience early initiation of breastfeeding than employed mothers.

Keywords: early initiation of breastfeeding; maternal employment status; urban

INTRODUCTION

Early initiation of breastfeeding is a process that begins immediately after birth by skin-to-skin contact between the newborn baby and the mother within at least an hour. Early initiation of breastfeeding benefits include reducing infant mortality, helping the baby's breathing and heartbeat become more stable, allowing the baby receives immune and essential substances, and stimulates milk flow from the breast. This also supports the continuity of exclusive breastfeeding for six months and the duration of breastfeeding [1,2].

According to UNICEF data in 2018, only two out of five newborns worldwide received early initiation of breastfeeding within the first hour of life. Regionally,

the coverage varied, with South Africa at 65%, Eastern Europe and Central Asia at 56%, South Asia at 40%, and East Asia and the Pacific at 32% [2]. In Southeast Asia, Indonesia's early initiation of breastfeeding rate was relatively low at 49.32% in 2012, compared to Myanmar (68.76% in 2016) and Cambodia (62.56% in 2014) [8]. However, Indonesia has made substantial progress in recent years. Based on data from the Statistics Agency, the percentage of women aged 15–49 years who practiced EIBF increased from 72.51% in 2019 to 74.91% in 2020 and 75.57% in 2021 [3–5]. These figures exceeded Indonesia's national targets for EIBF, which were set at 50.0% in 2019, 54% in 2020, and 58% in 2021 [1,6,7].

The 2017 Indonesia Demographic Health Survey showed that the percentage of married women aged 15-49 years was 61.6% among employed mothers in urban areas. They worked 37% in the sales business, and 30% of women without children. Women with five or more children, 44% worked as peasants [9]. Unemployed women with babies had no problem breastfeeding, but working women in urban areas did not. A study in Pakistan found that employed mothers were more likely to postpone the early initiation of breastfeeding than those who were unemployed. Meanwhile, in India, unemployed mothers were more likely to postpone the early initiation of breastfeeding [10]. Employed mothers prefer cesarean surgery to deliver a baby, because they cannot do early initiation of breastfeeding due to the recovery after cesarean [11]. Other studies found that employed mothers were more likely to initiate breastfeeding because they had broader knowledge and information [12].

Early initiation of breastfeeding is widely recognized as a crucial practice for improving neonatal survival and long-term health outcomes. Global and regional studies have explored various factors that determine the early initiation of breastfeeding, including maternal education, delivery mode, and access to healthcare. However, findings on the impact of maternal employment status remain mixed. Some research suggests that working mothers face greater challenges in initiating breastfeeding early due to workplace demands or recovery after cesarean delivery. In contrast, others highlight that employed women may have better access to health information, promoting positive practices. In Indonesia, despite increasing EIBF coverage in recent years, studies specifically examining the role of employment status in urban contexts are still limited. This study contributes to filling that gap by analyzing nationally representative data to better understand how maternal employment relates to the early initiation of breastfeeding practices in urban Indonesia.

METHODS

For this study, the authors developed a cross-sectional design. In the meantime, the research looked at secondary data from the 2017 Indonesian Demographic and Health Survey (IDHS). The IDHS was a component of the global survey conducted by the Inner City Fund as part of the Demographic and Health Survey (DHS) program. The study population was children younger than 24 months in urban Indonesia. The IDHS used stratification and multistage random sampling to select the required samples. A total of 36,163 children participated in the study. The study's analytic unit included children under 24 months; the respondent was the mother.

The outcome variable in this study was early initiation of breastfeeding, defined as starting breastfeeding within the first hour after birth with immediate skin-to-skin contact [13]. Early initiation of breastfeeding was categorized as "Yes" or "No." The main exposure variable was maternal employment status, classified as employed or unemployed. Ten control variables included the current marital status, age, education, parity, wealth status, antenatal care visits, place of delivery, mode of delivery, type of birth, and child's sex. Marital status was recorded as currently married/living with a partner or not.; age was grouped into <20, 20–34, and 35–49 years; education was categorized as no education, primary, secondary, and higher; and parity was defined as primiparous or multiparous [14]. Wealth status was measured using a DHS-developed wealth index based on household expenditures and divided into five quintiles: poorest to richest [15,16]. Antenatal care was grouped as <4 or ≥4 visits; delivery place as health or non-health facility; mode of delivery as normal (vaginal) or cesarean; type of birth as single birth or twin; and child's sex as male or female.

The authors used the Chi-Square test to perform a bivariate analysis in the first stage. The collinearity test was used in the study's second stage to ensure no strong relationship between the independent variables. In the final stage, we used a binary logistic regression test (enter method). Adjusted odds ratios (AOR) were presented with 95% confidence intervals. The authors performed all statistical analyses using SPSS 26 software.

This study used secondary data from the 2017 Indonesia Demographic and Health Survey (IDHS), with all respondent identities removed to ensure confidentiality. Informed consent was obtained from participants, including parental or guardian consent for children under 16. The author received permission

to access the data from https://dhsprogram.com. The survey followed the DHS-7 protocol, approved by ICF International's Institutional Review Board and previously reviewed by the ORC Macro IRB in 2002, in accordance with U.S. regulations on the protection of human subjects (45 CFR 46).

RESULTS

Table 1 showed the proportion of mothers who do not experience early initiation of breastfeeding is higher than those who do. On both kinds of maternal employment status dominated by mothers who were married or living with a partner, the maternal age 35-49 years, maternal education level on secondary education, parity, with multiparous, the richest wealth status, mothers with four or more antenatal care, mothers who delivered in health facilities and with normal delivery, and the proportion of male children was slightly higher than female children.

Table 1. Descriptive statistics of maternal employment status and related variables (n=36,163)

Variables	Employment Status		p-value
	Unemployed (n=14,952)	Employed (n=21,211)	
Early initiation of breastfeeding			< 0.001*
No	64.0	77.1	
Yes	36.0	22.9	
Current marital status			< 0.001*
Married/living with a partner	97.6	90.9	
Separated	2.4	9.1	
Age			< 0.001*
< 20	0.9	0.2	
20-34	39.5	26.8	
35-49	59.6	73.0	
Maternal education level			< 0.001*
No school	0.8	1.1	
Primary	25.2	23.7	
Secondary	64.1	53.8	
Higher	9.8	21.4	
Parity			< 0.001*
Primiparous	12.7	11.4	
Multiparous	87.3	88.6	
Wealth status			< 0.001*
Poorest	10.2	8.4	
Poorer	17.5	14.0	
Middle	21.0	19.8	
Richer	24.9	24.7	
Richest	26.4	33.1	
Antenatal care			< 0.001*
< 4 times	1.4	0.7	
≥ 4 times	98.6	99.3	
Place of delivery			< 0.001*
Non-health facility	4.1	2.0	
Health facility	95.9	98.0	
Mode of delivery			< 0.001*
Normal (vaginal)	94.1	95.2	
Cesarean section	5.9	4.8	
Type of birth			0.332
Single birth	98.8	98.7	
Twine	1.2	1.3	
Child sex			0.231
Male	51.7	51.0	
Female	48.3	49.0	

*Significant at the 99% level

Table 2. Results of binary logistic regression (n=36,163)

Predictors	p-value	Early initiation of breastfeeding		
		AOR	95% CI	
			Lower Bound	Upper Bound
Maternal employment status				
Unemployed	**< 0.001	1.587	1.509	1.669
Employed (ref.)	-	-	-	-
Current marital status				
Married/Living with a partner	**< 0.001	2.213	1.938	2.527
Separated (ref.)	-	-	-	-
Age				
< 20	**< 0.001	7.508	5.408	10.423
20-34	**< 0.001	3.777	3.580	3.984
35-49 (ref.)	-	-	-	-
Maternal education level				
No school (ref.)	-	-	-	-
Primary	0.276	1.174	.880	1.565
Secondary	*0.001	1.614	1.212	2.150
Higher	**< 0.001	2.103	1.569	2.819
Parity				
Primiparous	**< 0.001	0.508	0.469	0.551
Multiparous (ref.)	-	-	-	-
Wealth status				
Poorest (ref.)	-	-	-	-
Poorer	0.061	0.908	0.820	10.004
Middle	*0.002	0.853	0.773	0.941
Richer	**< 0.001	0.735	0.666	0.810
Richest	**< 0.001	0.720	0.652	0.795
Antenatal care				
< 4 times (ref.)	-	-	-	-
≥ 4 times	**< 0.001	0.623	0.498	0.779
Place of delivery				
Non-health facility (ref.)	-	-	-	-
Health facility	**< 0.001	2.770	2.414	3.179
Mode of delivery				
Normal (vaginal)	**< 0.001	0.722	0.652	0.801
Cesarean section (ref.)	-	-	-	-

CI: confidence interval of 95%; *p-value < 0.001; **p-value < 0.010

The data also suggest that maternal characteristics such as marital status, age, education, and socioeconomic background differ between employed and unemployed groups, potentially influencing breastfeeding behaviors. For instance, employed

mothers tended to have higher education and wealth status, yet these advantages did not translate into better early initiation of breastfeeding outcomes. Overall, the table highlights how employment status is intertwined with a range of demographic and health service factors that collectively affect early breastfeeding initiation.

Table 2 reveals that maternal employment status significantly influences early initiation of breastfeeding, with unemployed mothers being more likely to initiate breastfeeding early than employed mothers. Additionally, several other factors were found to be significantly associated with the early initiation of breastfeeding in urban Indonesia. Those were the maternal marital status, age, education level, parity, wealth status, antenatal care, place of delivery, and mode of delivery.

Mothers who were married or living with a partner, younger in age, had higher education levels, and delivered in health facilities were more likely to perform early initiation of breastfeeding. Interestingly, mothers with higher socioeconomic status and those who had antenatal care visits four times or more were less likely to initiate early breastfeeding, suggesting potential gaps in health education or differing priorities in higher-income groups. These findings emphasize that both individual characteristics and health service utilization play a critical role in supporting early breastfeeding practices.

DISCUSSION

This study highlights that maternal unemployment status was a protective factor for early initiation of breastfeeding in urban of Indonesia. Unemployed mothers are more likely to have an early initiation of breastfeeding than employed mothers. Unemployed mothers had more free time and no pressure. In line with this study, other studies in Indonesia, Pakistan and Namibia showed that employed mothers were less likely to perform early initiation of breastfeeding than unemployed mothers, but contrary in India, unemployed mothers were more likely to delay early initiation of breastfeeding [10,17,18].

The study indicated that getting married or living with a partner was a protective factor for the early initiation of breastfeeding. This result was in line with studies that indicated that living with a partner was one of the factors associated with early initiation of breastfeeding [19]. Mothers need support to initiate breastfeeding early. This result was in line with studies that indicated that living with a partner was one of the factors associated with early initiation of breastfeeding [19]. Mothers needed support to do early initiation of breastfeeding, which included information, physical and emotional support from family. Family or partner's support would increase the mother's self-confidence, create a sense of comfort, affect breast milk production, and increase enthusiasm and sense of belonging, and determine the fluency of the letdown reflex during early initiation of breastfeeding [20]. Poor support from a partner had a risk of failing early initiation of breastfeeding seven times larger [21].

The younger the mother was at pregnancy, the more likely the experience and affected the success rate of early initiation of breastfeeding. In line with previous research that younger mothers had a higher success rate than older ones, both primiparous and multiparous [22]. There was a decreased likelihood in women of adolescent ages (15-19 years) [10]. Maternal age determined maternal health because it was related to the conditions of pregnancy, childbirth, and the postpartum period, as well as how to care for and breastfeed the baby. Adolescents were immature, unprepared interfacing pregnancy, delivery, and breastfeeding the newborn. In contrast, at the age of ≥35 years, even decreasing hormone production affected the lactation's process [23], but at the 35-45 years age group the early initiation of breastfeeding [24]. Meanwhile, accorded to other studies, maternal age was not related to the early initiation of breastfeeding [17].

The result indicated that the higher the level of the mother's education, the initiative to carry out early initiation of breastfeeding increases. The condition was in line with studies that found that the higher the level of education, the greater the likelihood of early initiation of breastfeeding compared to those who were not educated [18]. Mothers who completed primary school were more likely to start breastfeeding within the first hour of delivery than mothers without education. However, mothers with secondary education levels or higher were not significantly different from mothers without education regarding early initiation of breastfeeding [25].

The primiparous was a risk factor for early initiation of breastfeeding, in line with a study in Bangladesh [26]. However, in contrast, a previous study found a positive association between early initiation of breastfeeding and multiparity, and it might be primiparous with planned pregnancies [18]. The study indicated the higher the wealth status, the less likely it was to experience early initiation of breastfeeding. A study from 123 countries in poor, middle, and rich countries found that 21% of babies in high-income countries had never experienced breastfeeding, and 4% in low and middle-income countries. Babies from the poorest families had breastfeeding rates at two years

which were 1.5 times higher than those of the wealthiest families [27]. In contrast, a study found that the women in the wealthiest households were more likely to exclusively breastfeed the child than the poorest households [28]. Previous study also found that there was an association between income and breastfeeding, in contrast, that wealth status, which was described by the income and occupation of the mother or partner, was no longer significant in breastfeeding implementation [29].

The results indicated that mothers who received antenatal care four times or more were less likely to initiate breastfeeding early than those who received it less than four times. Standard antenatal care was four times which included maternal health status, nutrition and supplements, immunization, and fetal growth status. Antenatal care's goal was for a safe and healthy pregnancy and labor [30]. In Indonesia, the antenatal care program was excluded from the promotion of early initiation of breastfeeding. Promotion of early initiation of breastfeeding was included in the standard operating procedure of delivering normal neonates, which health attendees would do at health care [31]. In line with the result that antenatal care did not increase the number of early initiation of breastfeeding. A previous study in Northern Tanzania showed that only 54% did early initiation of breastfeeding and were counseled during antenatal care [32]. Meanwhile, a study found that the promotion of breastfeeding during antenatal care consultation on high-risk pregnancies significantly improved [33].

The study found that delivery in health facilities was a protective factor for early initiation of breastfeeding. Availability and accessibility of health facilities and information in urban areas were advantages for pregnant women. A study in Nepal showed that women who delivered at health facilities were associated with early initiation of breastfeeding because they got attendance and consultation about pregnancy and early initiation of breastfeeding after delivery by health care providers [34]. In line with Indonesia's program, the promotion of early initiation of breastfeeding was included in the standard operating procedure of delivering normal neonates, which health attendees would do in healthcare [31].

The results indicated that vaginal delivery was a risk factor for early initiation of breastfeeding. In contrast, previous studies in Sudan and Ethiopia showed that mothers who had a vaginal delivery were much more likely to start early initiation of breastfeeding than mothers who had cesarean deliveries [35,36]. The result also showed that a mother who did not experience early initiation of breastfeeding was more likely to be employed. So, even mothers who have vaginal delivery are also not giving early initiation of breastfeeding because of their employment status.

The findings of this study imply that public health efforts in urban area Indonesia should prioritize support for employed mothers through workplace breastfeeding policies and education, enhance the quality of antenatal care by integrating effective breastfeeding counseling, and strengthen health facility practices to ensure immediate postnatal support for early initiation of breastfeeding. Additionally, tailored interventions are needed for first-time and unmarried mothers, as well as wealthier women who may face different barriers, to ensure equitable promotion of early breastfeeding across all socioeconomic groups.

CONCLUSION

The study concluded that maternal employment status correlates with early initiation of breastfeeding among children less than 24 months in urban Indonesia. Unemployment status are more likely to experience early initiation of breastfeeding than those employed. Breast milk benefits are saving lives, protecting babies and mothers against a deadly disease, and better IQ. Regardless of the country's wealth level, Indonesia needs policies that support every mother to breastfeed her baby and increase knowledge for mother and their living partner for successful early initiation of breastfeeding implementation, whether they are employment or unemployment, even living in urban or rural areas.

Based on the findings, it is recommended that policymakers and healthcare providers strengthen support for employed mothers to enable early initiation of breastfeeding. This includes implementing workplace-friendly breastfeeding policies, enhancing maternity leave regulations, and promoting breastfeeding education during antenatal care. Health facilities should also ensure immediate postpartum support, particularly for mothers undergoing cesarean delivery. Further research is needed to explore specific barriers faced by working mothers, including employment conditions and workplace environments, to develop targeted interventions that improve early breastfeeding practices.

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