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Early Initiation of Breastfeeding (EIBF) and Exclusive Breastfeeding in Districts/Cities in Central Java Province

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Abstract

WHO recommends Early Initiation of Breastfeeding (EIBF) during the first hour of life, maintaining exclusive breastfeeding for up to 6 months postpartum, and continuing breastfeeding after this period in addition to healthy foods suitable for infants up to 2 years of age or more. This form of feeding is considered effective in ensuring the health and survival of newborns worldwide. Early Initiation of Breastfeeding (EIBF) will also greatly assist in the sustainability of exclusive breastfeeding (breast milk only) and the duration of breastfeeding. The percentage of newborns who received EIBF in Central Java Province in 2023 was 87.7%, an increase compared to the achievement in 2022 of 85.9%. Meanwhile, the percentage of exclusive breastfeeding for infants aged 0-6 months in Central Java in 2023 was 64.3%, decreasing when compared to the percentage of exclusive breastfeeding in 2022, which was 71.4%. The purpose of the study was to answer the relationship between Early Initiation of Breastfeeding (EIBF) and Exclusive Breastfeeding. The analysis involved Early Initiation of Breastfeeding (EIBF) as an independent variable, and Exclusive Breastfeeding as a dependent variable. The relationship analysis was carried out using a scatter plot diagram. There are 5 regencies or cities that have exclusive breastfeeding coverage above the target of 80%, namely Klaten Regency, Jepara Regency, Purworejo Regency, Semarang City and Rembang Regency. Meanwhile, the lowest exclusive breastfeeding coverage was achieved by Semarang Regency (25.54%), with EIBF coverage (94.82%). There is a linear and positive relationship between Early Initiation of Breastfeeding (EIBF) and exclusive breastfeeding. It is necessary to examine other variables that contribute to exclusive breastfeeding to increase the coverage of exclusive breastfeeding in regencies or cities that have not met the target.

Keywords: Early Initiation of Breastfeeding, exclusive breastfeeding, lactation

INTRODUCTION

UNICEF and WHO recommend exclusive breastfeeding for the first six months of life, starting within one hour of birth. Continuing exclusive breastfeeding without any other foods for the first six months improves sensory and cognitive development and protects infants from infectious and chronic diseases. Exclusive breastfeeding for six months has many benefits for infants and mothers. The most important benefit for infants is protection against gastrointestinal infections. The risk of death from diarrhea and other diseases may be increased in infants who are partially or completely breastfed. Exclusive breastfeeding reduces the risk of disease from a variety of conditions and minimizes the risk of obesity.¹ This suggests that optimal growth and development can be ensured through exclusive breastfeeding in infants.

For mothers, exclusive breastfeeding reduces the likelihood of developing chronic diseases associated with obesity and the development of ovarian and breast cancers, as well as postpartum hemorrhage. In addition, evidence suggests that mothers who exclusively breastfeed their infants are less likely to experience symptoms of depression. Promotion of exclusive breastfeeding, defined by WHO as the practice of giving infants only breast milk for the first six months of life without any

¹ Pat Hoddinott, David Tappin, and Charlotte Wright, "Breast Feeding," *Bmj* 336, no. 7649 (2008): 881–87.

additional food or fluids, is an essential component of public health and infant well-being.² The importance of this practice is underscored by the large body of scientific evidence supporting its role in maintaining infant and maternal health, as well as its broader social implications.

In addition, WHO also recommends Early Initiation of Breastfeeding (EIBF) during the first hour of life, maintaining exclusive breastfeeding for up to 6 months postpartum, and continuing breastfeeding after this period alongside appropriate healthy foods for infants up to 2 years of age or beyond.³ This form of feeding is considered effective in ensuring the health and survival of newborns worldwide.⁴ Early Initiation of Breastfeeding (EIBF) is a breastfeeding process that begins immediately after birth with skin-to-skin contact between the baby and the mother and lasts for at least 1 (one) hour. Some of the benefits of EIBF include reducing infant mortality rates, helping the baby's breathing and heartbeat to be more stable, the baby gets immune substances and other important substances, and stimulating the flow of breast milk from the breast. Early Initiation of Breastfeeding will also greatly assist in the continuation of exclusive breastfeeding (breast milk only) and the duration of breastfeeding.

The percentage of newborns who received EIBF in Central Java Province in 2023 was 87.7 percent, an increase compared to the achievement in 2022 of 85.9 percent. Meanwhile, the percentage of exclusive breastfeeding for infants aged 0-6 months in Central Java in 2023 was 64.3 percent, a decrease compared to the percentage of exclusive breastfeeding in 2022, which was 71.4 percent. The World Health Organization (WHO) recommends breastfeeding within the first hour of life to prevent neonatal deaths caused by infections such as sepsis, pneumonia, and diarrhea. In addition, exclusive breastfeeding for the first six months of life helps protect babies from gastrointestinal problems and allergies.⁵ Studies have shown that if babies are breastfed within the first hour of life, the risk of neonatal death can be reduced by 15%.⁶ However, globally, only 57.6% of newborns are breastfed within the first hour after birth, which is still far from the WHO target.

Previous studies have shown that several factors, including area of residence, ethnicity, maternal occupation, maternal education, maternal smoking status, parity, husband's support, and maternal age are associated with exclusive breastfeeding.⁷ However, a comprehensive understanding is needed of the relationship between the continuation of exclusive breastfeeding for up to 6 months and Early Initiation of Breastfeeding (EIBF). So the objective to be achieved in this study is to determine the linear relationship between Early Initiation of Breastfeeding (EIBF) and Exclusive Breastfeeding in Districts or Cities in Central Java Province.

METHOD

Secondary data were taken from the source of the Central Java Health Profile Book 2023 issued by the Central Java Provincial Health Office (Dinas Kesehatan Provinsi Jawa Tengah, 2023). The unit of analysis in this study was the Regency or City in Central Java Province, totaling 35. Overall, 35

² Hoang Thi Nam Giang et al., "Prevalence of Exclusive Breastfeeding for the First Six Months of an Infant's Life and Associated Factors in a Low-Middle Income Country," *International Breastfeeding Journal* 18, no. 1 (2023): 47.

³ Sun Kyung Kim et al., "Interventions Promoting Exclusive Breastfeeding up to Six Months after Birth: A Systematic Review and Meta-Analysis of Randomized Controlled Trials," *International Journal of Nursing Studies* 80 (2018): 94–105.

⁴ Herzt Anenden, "Facts on Breastfeeding," Retrieved March 6 (10AD): 2014.

⁵ W H O Global Nutrition Targets, "Policy Brief Series. 2014," Contract No.: WHO Reference Number: WHO/NMH/NHD/14.2, 2025.

⁶ Kenzo Takahashi et al., "Prevalence of Early Initiation of Breastfeeding and Determinants of Delayed Initiation of Breastfeeding: Secondary Analysis of the WHO Global Survey," *Scientific Reports* 7, no. 1 (2017): 44868.

⁷ Cristiano Siqueira Boccolini, Márcia Lazaro de Carvalho, and Maria Inês Couto de Oliveira, "Factors Associated with Exclusive Breastfeeding in the First Six Months of Life in Brazil: A Systematic Review," *Revista de Saude Publica* 49, no. 00 (2015): 91.

⁸ Kok Leong Tan, "Factors Associated with Exclusive Breastfeeding among Infants under Six Months of Age in Peninsular Malaysia," *International Breastfeeding Journal* 6 (2011): 1–7.

Regencies or Cities in Central Java Province were analyzed in a study on the relationship between Early Initiation of Breastfeeding (EIBF) and Exclusive Breastfeeding. The independent variable that is the input variable is the baby who does Early Initiation of Breastfeeding (EIBF). While the dependent variable that is the output variable is the baby who receives Exclusive Breastfeeding. The Exclusive Breastfeeding Output is plotted using a scatter plot diagram to determine the linear relationship between Early Initiation of Breastfeeding (EIBF) and Exclusive Breastfeeding and to determine whether the relationship is positive or negative.

RESULT & DISCUSSION

Description of Early Breastfeeding Initiation (IMD)

The percentage of newborns who received EIBF in Central Java Province in 2023 was 87.7 percent, an increase compared to the achievement in 2022 of 85.9 percent. The district/city with the highest percentage of newborns receiving EIBF was Jepara Regency at 100 percent, while the lowest percentage was Kudus Regency at 61.53 percent.

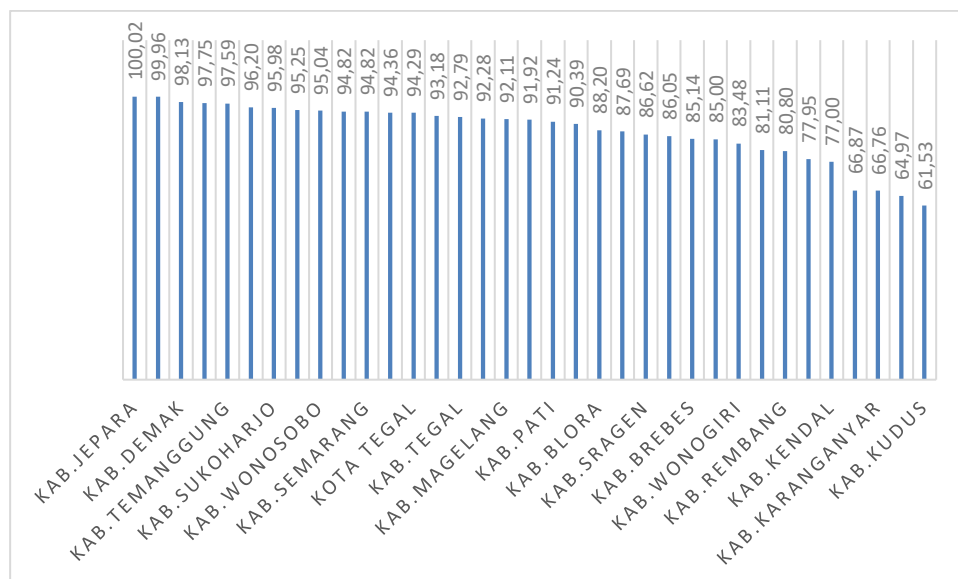


Figure 1. Coverage of Newborns Receiving Early Initiation of Breastfeeding (EIBF) by Regency/City in Central Java Province in 2023.

Source: Profil Kesehatan Provinsi Jawa Tengah Tahun 2023

The condition is supported by postpartum information in research that reveals several key factors related to breastfeeding practices. Where most mothers (74.4%) start their first breastfeeding within one hour after giving birth, which emphasizes the importance of breastfeeding initiation on time in the population. Here, it is clear that most mothers who start breastfeeding at the first hours after giving birth prefer to let their children live with them in the same room.⁹ In line with other studies it is found that babies who complete their first breastfeeding while making skin contact to the skin have a positive effect on exclusive breastfeeding. This shows that the importance of skin contact to the skin from an early age. Mothers who make skin contact to the skin for more than 90 minutes and complete the first breastfeeding during skin contact to the skin are found to have a statistically significant positive relationship with exclusive breastfeeding to infants during the first six months of life.¹⁰

This is in line with research in Colombia with the prevalence of EIBF is 65.6 % in children under 24 months and EBF is 43 % in infants under 6 months. Modified risk factors associated with delayed breastfeeding initiation are: sectio caesarea, overweight of the mother/obesity, lack of skilled officers

⁹ Nawal Alissa and Mawaddah Alshareef, "Factors Influencing Exclusive Breastfeeding in Saudi Arabia," in *Healthcare*, vol. 12 (MDPI, 2024), 639.

¹⁰ Giang et al., "Prevalence of Exclusive Breastfeeding for the First Six Months of an Infant's Life and Associated Factors in a Low-Middle Income Country."

during childbirth. Risk factors that can be modified for EBF disorders are sectio caesarea and prelacteal feeding. The intention not to get pregnant is a protective factor for EBF disorders.¹¹ Skin-to-skin contact, mode of delivery and type of birth attendance exert the strongest influence on EIBF in Indonesia in 2017. EIBF should be continuously promoted and supported particularly among mothers who do not have early skin-to-skin contact with their new-born, who have Caesarean deliveries and who have no skilled birth attendant.¹²

Description of Exclusive Breastfeeding

The percentage of exclusive breastfeeding for infants aged 0-6 months in Central Java in 2023 was 64.3 percent, a decrease compared to the percentage of exclusive breastfeeding in 2022, which was 71.4 percent. The district/city with the highest percentage of infants receiving exclusive breastfeeding is Klaten Regency at 82.95 percent, while the lowest percentage is Semarang Regency at 25.54 percent.

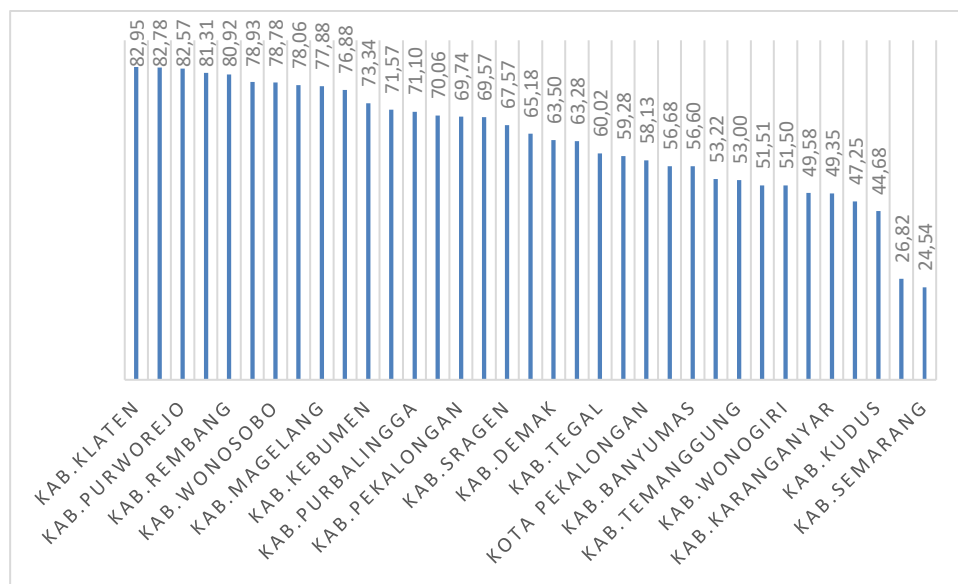


Figure 2. Coverage of Exclusive Breastfeeding by Regency/City in Central Java Province in 2023.
Source: Profil Kesehatan Provinsi Jawa Tengah Tahun 2023

Table 1. Descriptive Statistics of Early Initiation of Breastfeeding (EIBF) and Exclusive Breastfeeding

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Early Initiation of Breastfeeding (EIBF)	35	61.53	100.02	87.92	10.28
Exclusive Breastfeeding	35	24.54	82.95	63.66	15.04

Encourage early breastfeeding initiation and ensuring mothers are equipped with important information before giving birth is an important strategy to encourage exclusive breastfeeding. From the research that has been carried out the results of several factors, such as the initiation of breastfeeding on time (both in the first hour of labor or at or after 1 hour after delivery) and neonatal diseases are significantly related to exclusive breastfeeding. Children who receive early breastfeeding initiation have a higher chance of getting exclusive breastfeeding. Conversely, children who are sick in the first 28 days of life or during the neonatal period tend not to get exclusive breastfeeding.¹³

In addition, several demographic variables and traditional beliefs have a significant relationship

¹¹ Sheridan Finnie, Rafael Pérez-Escamilla, and Gabriela Buccini, "Determinants of Early Breastfeeding Initiation and Exclusive Breastfeeding in Colombia," *Public Health Nutrition* 23, no. 3 (2020): 496–505.

¹² Maria Gayatri and Gouranga Lal Dasvarma, "Predictors of Early Initiation of Breastfeeding in Indonesia: A Population-Based Cross-Sectional Survey," *PloS One* 15, no. 9 (2020): e0239446.

¹³ Bunga Astria Paramashanti, "Timely Initiation of Breastfeeding Is Associated with the Practice of Exclusive Breastfeeding in Indonesia," *Asia Pacific Journal of Clinical Nutrition* 25 (2016): S52.

with exclusive breastfeeding. Designing a model policy that empowers women's roles and eradicates bad traditional beliefs in society is a fundamental step to increase the rate of exclusive breastfeeding.¹⁴ In addition, the percentage of mothers who successfully provide exclusive breastfeeding for up to 6 months is influenced by early initiation of breastfeeding, early skin-to-skin contact, and living in the same house affects the continuation of exclusive breastfeeding. Regional social capital was also found to support the continuation of breastfeeding. In contrast, the most influential inhibiting factors were starting childcare, smoking during pregnancy, and obesity body type during early pregnancy.¹⁵

Relationship between Early Initiation of Breastfeeding (EIBF) and Exclusive Breastfeeding

The distribution of Early Initiation of Breastfeeding (EIBF) and Exclusive Breastfeeding in each Regency or City in Central Java Province is shown in Figure 3. Kudus Regency with the lowest EIBF coverage (61.53%) has an Exclusive Breastfeeding coverage of 44.68%, while Jepara Regency with the largest EIBF coverage (100%) has an Exclusive Breastfeeding coverage of 82.78%. There are 5 Regencies or Cities that have Exclusive Breastfeeding coverage above the target of 80%, namely Klaten Regency, Jepara Regency, Purworejo Regency, Semarang City and Rembang Regency. Meanwhile, the lowest Exclusive Breastfeeding coverage was achieved by Semarang Regency (25.54%), with an EIBF coverage of 94.82%).

Figure 3 shows that there is a linear and positive relationship between Early Initiation of Breastfeeding (EIBF) and the provision of Exclusive Breastfeeding in Districts or Cities in Central Java Province, which means that the higher the coverage of EIBF in a region, the higher the coverage of Exclusive Breastfeeding.

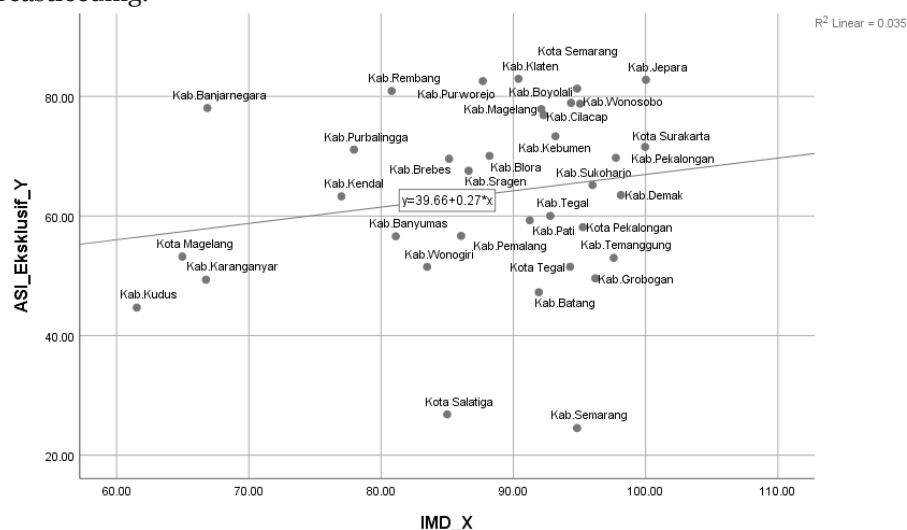


Figure 3. Scatter Plot of Early Initiation of Breastfeeding (EIBF) and Exclusive Breastfeeding

One of the findings in the study was the significant effect of the timing of the first breastfeed and receiving information about breastfeeding before delivery on the duration of exclusive breastfeeding. Mothers who initiated breastfeeding early and those who did not receive breastfeeding information before delivery tended to exclusively breastfeed for a longer period of time.¹⁶ This finding highlights the important role of education and health service support in promoting optimal infant feeding

¹⁴ Desale Sisay Yimer et al., “Exclusive Breastfeeding Practice and Its Associated Factors among Children Aged 6-23 Months in Woldia Town, Northwest Ethiopia,” *African Health Sciences* 21, no. 4 (2021): 1877–86.

¹⁵ Hitomi Inano et al., "Factors Influencing Exclusive Breastfeeding Rates until 6 Months Postpartum: The Japan Environment and Children's Study," *Scientific Reports* 11, no. 1 (2021): 6841.

¹⁶ Alissa and Alshareef, "Factors Influencing Exclusive Breastfeeding in Saudi Arabia."

practices.¹⁷

From the results of other studies obtained the results found no significant relationship between early breastfeeding (IMD) initiation and exclusive breastfeeding in 6 months after the delivery. The absence of a significant relationship does not mean that the relationship does not exist. It is possible that the neglect is caused by social or environmental variables and/or support policies aimed at maintaining exclusive breastfeeding that affect maintenance in the long run at a larger level.¹⁸ This condition is in line with the study which observed that Early Initiation of Breastfeeding (EIBF) itself was not associated with exclusive breastfeeding, while the provision of non-pretactal complementary foods was associated with a 1.6–3.5 times higher chance of exclusive breastfeeding.¹⁹

There are several factors that affect the success of breastfeeding. Hospital policies and health care providers play an important role in increasing the number of breastfeeding initiation among mothers undergoing caesarean section. Counseling, support, and education is an important task for health care providers to provide accurate information about the process of breastfeeding, its benefits, and eliminating myths.²⁰ While the results of other studies show that breastfeeding education is effective in increasing numbers and duration of breastfeeding initiation.²¹ Antenatal and postnatal treatment visits that focus on breastfeeding education for mothers, couples, and families have a significant impact on breastfeeding practices

CONCLUSION

There is a linear and positive relationship between Early Initiation of Breastfeeding (EIBF) and exclusive breastfeeding in the Regency or City of Central Java Province. There is a need for several efforts that can be made to improve Early Initiation of Breastfeeding (EIBF) which will greatly assist in the sustainability of exclusive breastfeeding and the duration of breastfeeding. The involvement of health workers in proactive counseling and education about breastfeeding, emphasizing the benefits of EIBF and exclusive breastfeeding. Health service providers and policy makers must be aware of their important role in facilitating maternal and child health by enabling mothers to make decisions about nutrition for their babies, which will ultimately lead to a longer duration of exclusive breastfeeding and provide many benefits for infant health.

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DECLARATION OF CONFLICTING INTERESTS

Authors state there is no conflict of interest in this research and or publication of his work.

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¹⁷ Jatani Admasu et al., "Effect of Maternal Nutrition Education on Early Initiation and Exclusive Breast-Feeding Practices in South Ethiopia: A Cluster Randomised Control Trial," *Journal of Nutritional Science* 11 (2022): e37.

¹⁸ Desirée Mena-Tudela et al., "Is Early Initiation of Maternal Lactation a Significant Determinant for Continuing Exclusive Breastfeeding up to 6 Months?," *International Journal of Environmental Research and Public Health* 20, no. 4 (2023): 3184.

¹⁹ Phuong Hong Nguyen et al., "Early Breastfeeding Practices Contribute to Exclusive Breastfeeding in Bangladesh, Vietnam and Ethiopia," *Maternal & Child Nutrition* 16, no. 4 (2020): e13012.

²⁰ Yuneft Ulfa et al., "Early Initiation of Breastfeeding up to Six Months among Mothers after Cesarean Section or Vaginal Birth: A Scoping Review," *Heliyon* 9, no. 6 (2023).

²¹ Juana Willumsen, "Breastfeeding Education for Increased Breastfeeding Duration," *World Health Organization*, 2013.

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