

# EFFECT OF EXCLUSIVE BREASTFEEDING ON GROWTH AND DEVELOPMENT OF INFANTS AGED 0-24 MONTHS

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## ABSTRACT

**Background:** Impaired growth and development of children impact the child's future. Exclusive breastfeeding is essential for the optimal growth and development of children. This study aimed to determine the effect of exclusive breastfeeding on the growth and development of infants aged 0-24 months.

**Subjects and Method:** This was a cross-sectional study conducted at Wonokromo district, Surabaya, East Java, from June to July 2020. A total of 40 under-two-years children was selected by purposive sampling. The dependent variable was the growth and development of children. The data for the growth of children were collected by accessing weight-for-age, length/ height-for-age, and head circumference measurement. The data for the development of children were collected using Revised Prescreening Developmental questionnaires (R-PDQ). The independent variable was exclusive breastfeeding. The data were analyzed by chi-square.

**Results:** Children receiving exclusive breastfeeding (96.8%) showed a better status of growth and development than without receiving exclusive breastfeeding (11.1%), and it was statistically significant ( $p < 0.001$ ).

**Conclusion:** Children receiving exclusive breastfeeding (96.8%) show a better status of growth and development than without receiving exclusive breastfeeding.

**Keywords:** exclusive breastfeeding, growth and development, children

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## BACKGROUND

Growth and development are an important period in toddlerhood. This period will experience a rapid increase at the age of 0-5 years, called the "Golden Age". Golden Age is a very decisive period in the process of growth and development so that if there are abnormalities, early detection can be done (Depkes RI, 2013). Disorders of growth and development of children greatly affect the future of children to compete globally.

The incidence of growth and development disorders in children under five, especially motor development disorders, was found (27.5%) or 3 million children (WHO,

2013). In 2013, nationally, the prevalence of wasting in children under five was still 12.1 percent, which meant that wasting in Indonesia was still a serious health problem. Around 16% of toddlers in Indonesia were reported to have developmental problems in intelligence disorders due to brain development disorders, hearing problems, and motor disorders (Depkes RI, 2013). In 2010, growth and development disorders in children in Indonesia reached 35.7% (Risksdas, 2010). In 2012 at Dr. General Hospital, Soetomo in Surabaya found 133 cases of children and adolescents with gross and fine motor development disorders (Suryawan, 2012).

The 7th International Conference on Public Health  
Solo, Indonesia, November 18-19, 2020 |56  
<https://doi.org/10.26911/the7thicph-FP.03.12>

One of the reasons for growth and development is genetic and environmental factors. Environmental factors require basic needs to have a positive influence on children's growth and development. These basic needs are grouped into three: (1) Foster care needs (physical-biomedical needs); (2) Compassion needs (emotional needs and affection); and (3) Sharpening needs (stimulation needs) (Sulistiyawati, 2014).

One of the efforts to improve infant development is exclusive breastfeeding. Breastmilk is an environmental factor and a need for care. According to Government Regulation No. 33 of 2012 and Health Law No. 36 of 2009, Article 128 and Article 129 explained that exclusive breastfeeding is breastfeeding a baby immediately after birth, only breastfeeding without other food and drinks until the baby is 6 months old (Purwanti, 2011).

Breast milk provides all the energy and nutrition needs of a baby during the first 6 months of life. Breast milk contains the best nutrition for babies because breast milk contains all the nutrients in the ideal amount and composition as well as the properties of breast milk that is very easily absorbed by the baby's body so that it is useful for helping optimal baby growth and development and protecting against various diseases (Nurheti, 2010).

Breastfeeding not only functions in providing nutrition for the baby but also has a significant role in the child's development. It seems as if the mother's child's relationship is not interrupted once Likewise, immediately after the baby is born, breastfeeding as early as possible is an early stimulation of child development. Optimal feeding for infants and children aged 0-24 months according to WHO, 2012 concerning Global Strategy

on Infant and Young Child Feeding are: breastfeeding the baby immediately after birth; providing exclusive breastfeeding, including breastfeeding only without other food and drinks until the baby is 6 months old, providing appropriate and adequate complementary foods from the age of 6 months and continuing breastfeeding until the child is 24 months old. (WHO, 2012).

The results of a study in Denmark found that babies who are breastfed for more than 9 months will become smarter adults. This is presumably because breast milk contains DHA / AA (Adriana, 2011). Several research results also showed that exclusive breastfeeding can increase growth in children under 2 (two) years of age, such as Al Rahmad's study in 2016, which stated that exclusive breastfeeding can increase growth in children compared to non-exclusive breastfeeding. Based on this background, the researchers were interested in knowing the relationship between exclusive breastfeeding and the growth and development of babies aged 0-24 months.

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## SUBJECTS AND METHOD

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### 1. Study Design

This was a cross-sectional study conducted from June to July 2020 at RW 01 Wonokromo Village, Surabaya.

### 2. Population and Sample

A total of 40 under-two-years children was selected by purposive sampling. The sample of the study was taken by purposive sampling.

### 3. Study Variables

The dependent variable was the growth and development of children. The independent variable was exclusive breastfeeding.

### 4. Study Instruments

Data collection using primary data was obtained from interviews guided by ques-

tionnaires that had been compiled and observing infant growth by measuring baby weight using baby scales, height, and head circumference, infant development by doing direct observation and guided by the developmental pre-screening questionnaire.

## 5. Data Analysis

The data were analyzed by chi-square. The normality test used was the Shapiro-Wilk test.

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## RESULTS

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### 1. Sample Characteristics

Based on Table 1 showed that most mothers aged 20-35 years were 25 people (62.5%), most of the mothers with high school education were 21 people (52.5%), and most of the mothers worked were as many as 23 people (57.5 %). According to age, most of the normal categories were 28 babies (70%) based on body weight. Based on height according to age, most of the normal categories were 38 babies (95%). Based on the measurement results, as many as 40 babies (100%) had normal head circumference. Based on the growth status, most of the growth status as many as 33 babies (82.5%) was good. Based on the development status, using the Developmental Pre-Screening Questionnaire was mostly according to the development of 35 babies (87.5%).

Table 1 also showed that breastfeeding was mostly exclusive breastfeeding as many as 31 babies (77.5%). The percentage of growth and development status most of the growth status was good as many as 31 babies (77.5%).

### 2. Bivariate Analysis

Based on table 2 showed that most infants who were exclusively breastfed show good growth and development status as many as 30 babies (96.8%). In comparison, most babies who were not exclusively breastfed

showed poor growth and development status as many as 8 babies (88.9%). Based on the statistical test, it was found that the p-value <0.001, which indicated that there was a significant effect between breastfeeding and the baby's growth and development status.

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## DISCUSSION

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Based on data on the characteristics of the mother's age, most (62.5%) mothers who provided exclusive breastfeeding were aged 20-35 years. Based on research conducted by Rahmawati (2013), it showed that mothers aged <20 years were considered not ready to exclusively breastfeed physically, mentally, and psychologically in the face of pregnancy, childbirth, and breastfeeding. The age of 35 years or more is considered dangerous because of reproductive and physical strength of the mother has been much reduced and decreased, besides that there can be congenital risks to the baby and can increase complications in pregnancy, childbirth, and the puerperium (Rahmawati et al., 2013).

Based on the level of education, it can be seen that most of the subjects had high school education (52.5%). Parental education is one of the important factors in children's development, with good education, parents can easily receive all information from outside, especially about how to care for children, maintain children's health, and children's education (Tahir et al., 2013). This was in accordance with the opinion of Lestari (2014), that the higher the mother's education the higher the mother's ability to absorb practical knowledge and non-formal education, especially through television, newspapers, radio, and others.

In line with the opinion of Sudiyanto and Sekartini (2011), that a person's health status is influenced by their educational status to determine the quality of their care.

Low maternal education and inadequate stimulation can cause deviation in child development.

Based on work, it can be seen that some (57.5%) of 23 people in RW 01 Wonokromo Village had their mother's status as unemployed mothers. This was in accordance with the opinion of Sinambella (2011), which

examined the pattern of care and development of children under five, showing the results that children with better development were more likely to be found in non-working mothers (43.24%) compared to working mothers (40.54%).

**Table 1. Sample characteristics**

Characteristics	Frequency (n)	Percentage (%)
<b>Maternal Age (Years)</b>		
<20	4	10
20-35	25	62.5
≥35	11	27.5
<b>Maternal Education</b>		
Junior	3	7.5
High School	21	52.5
Bachelor/ Diploma	16	40.0
<b>Maternal Works</b>		
Working	17	42.5
Not Working	23	57.5
<b>Body Weight/ Age</b>		
Normal	28	70.0
Thin	11	27.5
Very Thin	1	2.5
<b>Height/ Age</b>		
Normal	38	95
Short	2	5.0
Tall	0	0
<b>Head Circumference</b>		
Normal	40	100
Microcephalus	0	0
<b>Growth Status</b>		
Normal	33	82.5
Underweight	7	17.5
<b>Developmental Status</b>		
Accordance with age (9-10)	35	87.5
Doubtful (7-8)	5	12.5
Poor (<6)	0	0
<b>Breastfeeding</b>		
Exclusive breastfeeding	31	77.5
Non-exclusive breastfeeding	9	22.5
<b>Growth and Development Status</b>		
Good	31	77.5
Poor	9	22.5

**Table 2. The relationship of breastfeeding with the growth and development of babies**

Giving Breastfeeding	Status of Growth and Development				OR	CI 95%		p
	Good		Poor			Lower Limit	Upper Limit	
	N	%	N	%				
Exclusive breastfeeding	30	96.8	1	3.2	149.50	13.40	542.20	<0.001
Non-exclusive breastfeeding	1	11.1	8	88.9				

In accordance with the research of Abdulloh (2013) which stated that mothers who do not work have more time with their children so that they have a greater opportunity to pay attention to the needs of their children compared to mothers who work.

Based on Table 1, it was known that the growth and development status of babies aged 0-24 months in RW 01 Wonokromo Sub-district, Surabaya, was mostly 77.5% with good growth and development status. This can be seen from the growth status and Head Circumference in the normal category was 82.5%. Growth is a change in physical size from time to time, both in terms of dimensions, proportions, and composition or better known as anthropometry. Babies in the good growth category can be caused because of the good nutrition (Adriana, 2011).

This was supported by the theory put forward by Yeni (2015), which stated that intake good and balanced nutritional, good health maintenance, good parenting, and clean and healthy environmental conditions can affect the growth and development of babies. The growth of a baby is good when a baby gets older, the body weight, height, and head circumference will also increase within normal limits according to his age (Soetjiningsih, 2013). This was supported by research by

Ernawati (2013), which stated that growth is a dynamic and continuous process and increases in cell size in all parts of the body.

The development status using the Developmental Pre-Screening Questionnaire with the appropriate category was 87.5%, while the doubtful category was 12.5%. Giving stimulation will be more effective if you pay attention to the needs of the child according to the stage of development. Stimulation in children is stimulated to want to do various activities that involve gross motoric, fine motor skills, language and social personalities such as walking holding hands, picking up small objects, imitating sounds, eating alone, according to developmental tasks at each age stage (Sulistyawati, 2014). The results of this study were reinforced by the results of previous studies explaining that mothers who provide bad stimulation to their babies will have babies with suspected developmental delays compared to mothers who provide good stimulation (Sumiyati, 2016).

Based on Table 2, it showed that p value of the exclusive breastfeeding on the growth and development of infants was 0.001 which means that there was an effect of exclusive breastfeeding on infant growth and development. The content of breast milk as the most complete nutritional diet is a need for care for babies.

Breastfeeding also provides immunity, increases affection, can support motor development, supports personality development, emotional intelligence, spiritual maturity, and good social relationships. This is because during breastfeeding, between mother and baby there is physical and psychological contact as early as possible with the mother, the child's need for love, attention, and respect provides a sense of security for the baby and a stimulation process occurs which stimulates the formation of collaboration between brain networks to become more and perfectly intertwined so as to stimulate the basic abilities of infant development from an early age. This happens through sound, eye gaze, heart rate, caress, emission, and taste of breast milk (Khassawneh et al., 2010).

This was consistent with research conducted by Nurjannah (2015), there was a relationship between exclusive breastfeeding and the development of babies aged 6-12 months. The results of this study were also consistent with the results of research by Ali et al. (2014), children who were exclusively breastfed for 6 months are better in the gross motoric sector than children who do not get exclusive breastfeeding. It can be concluded that exclusive breastfeeding plays an important role in child development, by holding the baby while breastfeeding, looked at him, invited him to speak with great affection, a mother has met the need for stimulation.

Stimulation is important in child development. Children who get a lot of targeted stimulation will develop faster than children who are less stimulated (Ministry of Health RI, 2012). Therefore, parents play an important role in creating

the environment necessary for children's development.

Based on the results of the study, it can be concluded that exclusive breastfeeding increases the growth and development status of infants aged 0-24 months.

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