

# RESPONDING TO EVOLVING CHALLENGES TOWARD ACHIEVING GENDER EQUALITY AND SOCIAL INCLUSION



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## Foreword

Praise be to Allah the Almighty God for the blessing and mercy given to us. *Shalawat* and *salam* are addressed to the Prophet Muhammad Saw.

This book was created as one of the activities of the publication of the ICGS-1 International Conference held by the Center for Women, Gender, Children and Family Studies, Andalas University. The manuscripts presented at this conference have been published in various medias, such as proceedings, journals, and books. This book does not only contain articles from ICGCS speakers but also contains ideas, works, and thoughts from gender observers, researchers, lecturers, and students.

We, then, would like to thank all those who have contributed to the publication of this book. To the Chancellor of Unand through the Institute for Research and Community Service, Universitas Andalas that has provided financial support, as well as the Association of Indonesian Women, Gender and Children Study Centers that always provide enthusiasm and motivation for ICGS and its publications.

The great thanks are addressed to all the authors. I would like also to express my highest appreciation to the committee members who have worked amazingly since 2021. Continuous efforts are tirelessly carried out so that the work of all participants can be published. May Allah reward us all. Aamiin.

Hopefully, this book can enlighten us all regarding gender and everything related.

Thank you very much.

Regards

**Dr. Ike Revita, M. Hum.**

ICGCS Committee Chair





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# EXCLUSIVE BREASTFEEDING AND MOTOR DEVELOPMENT IN CHILDREN

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## Abstract :

Mother's milk or ASI, especially exclusive breastfeeding is one of the factors that play an important role in the growth and development phase of children during infancy and toddlerhood. Exclusive breastfeeding contains the nutrients that babies need from hormones, antibodies, immune factors to anti-oxidants. Exclusive breastfeeding is mother gave her milk to babies after delivered until 6 months without adding or replacing with food or drink. This study aims to see whether exclusive breastfeeding has a relationship with children's gross motor development. This study was conducted using a literature study method through online searches. Researchers examined several literatures such as journals and articles sourced from PubMed, and Portal Garuda. The results from 10 (ten) previous studies show more studies have conclusion that infants who were exclusively breastfed have a significant association with gross motor development among children. These results can be influenced by several factors such as: Genetics, Nutrition, Disease, Socio-Economic, and Emotions. Based on the results of research in the literature study, it can be concluded that there is an association between exclusive breastfeeding and gross motor development in infants.

Keywords: Children; Exclusive breastfeeding; motor development,

## INTRODUCTION

The most important phase in a child's growth and development is during infancy and toddlerhood. Because this phase is the most critical time for parents to build the foundation for their baby's growth and development beside build emotional bonding between parent and their children. The process of growth and development in infancy and



toddlerhood is a very important process in determining the future of children physically, mentally and behaviorally (Test, 2016). Moreover, growth disorder occurred in this period, such as stunting is also related to the development of children aged 12-36 month (Nuwila & Agnes, 2021).

One of the factors that play a role in improving child health, growth and development is the provision of breast milk. Especially exclusive breastfeeding during the first 6 months of life, optimal breastfeeding is important in the maintenance, growth and development of children. Focus on development of children, as we know that development involves the process of differentiation of cells, body tissues, organs and organ systems that develop in such a way that each can fulfill its functions including emotional, intellectual, and behavioral development as a result of interaction with the environment (Sari BTP, 2017).

Breast milk plays an important role in gross and fine motor development because it contains all the nutrients that babies need from hormones, antibodies, immune factors to antibodies oxidant. Babies who do not get breast milk are more susceptible to infection. If now many toddlers experience malnutrition or starvation, because the child does not get breast milk (Nurilila & La Fua, 2015). Motor development is defined as the development of elements of maturity and control of body movements, and this development is closely related to the development of the motor center in the brain. In children, this movement can be more clearly distinguished between gross and fine movements. Called a gross movement, when the movement involved most parts of the body and usually requires energy because it is done by the larger muscles. From the results of observations of infants who are exclusively breastfed, it shows that on average their gross motor movements are faster (Sari BTP, 2017).

Regulation about exclusive breastfeeding from Government of Indonesian Republic stated that every mother should give exclusive breastfeeding to babies born up to 6 months without adding and or replacing with food or drink. In fact, not all components of society understand this condition, so that the use of breast milk in Indonesia as the main nutrition for infants during the first six month of life does

not show an increasing statistic (Desitawati, Wattimena, & Susanti, 2020). Basic health survey of Riskekas data in year 2013 showed that the percentage of the baby with the lowest percentage in children aged 6 months in Indonesia was 46.3%, ranging from 10.5% in East Java Province with lower exclusive breastfeeding rate in Indonesia, such as birth pattern, household wealth status and mother's occupation (Nurokhmah, Rahmawaty, & Puspitasari, 2022).

Assessment of growth and development needs to be carried out to determine whether a child's growth and development is running normally or not, both from a medical and statistical perspective. Healthy children will show optimal growth and development if given an adequate bio-physical-psychological environment. Previous study in Kenya showed that exclusive breastfeeding in 3-6 months period was associated with the mean of scores in communication, gross motor and problem solving domain. That study was also found that there were weak associations exclusive breastfeeding with the fine motor and social-emotional domain (Onyango et al., 2022). Other study in Central Java Province identified provision of exclusive breastfeeding was correlated with child's emotional development (Kusmiyati et al., 2018). Therefore, it is necessary to research through literature study whether exclusive breastfeeding has impact to specific development, mainly gross motor development among children in Indonesia.

#### METHODS

This study was conducted using a literature study method through online searches. Researchers reviewed several scientific literatures, both journals and articles from PubMed and Garuda Portal published, also the study was done in Indonesia. The keywords used to search for related journals were breastfeeding and "motor development" or breastfeeding AND Motor Milestones Development. The inclusion criteria used were scientific literature in English or Indonesian, and the focus of the literature on breastfeeding, children aged 0-24 months. The exclusion criteria are if the literature for publication of articles or journals is not in full text and open access,



the article does not have the name of the author or reference. In the end, there were 10 scientific literatures that met the inclusion criteria and related data regarding breastfeeding information for infants were reviewed and analyzed into a literature study manuscript. This study was made without conducting a meta-analysis process. Therefore, data analysis was carried out by means of narrative interpretation.

## RESULTS AND DISCUSSION

From the literature study, the following results were obtained (Table 1),

Table 1. Literature studies

No	Researcher	Title of Research	Research Design	Research Variable	Result
1.	Sajiman, Nurha-mid, Mah-polah	Growth and gross motor development in baby with breastfeeding at Sei Ulinhealth centre, Banjarbaru	Cross-sectional	Independent variable = breastfeeding variable = growth and gross motor development	There is not different growth of baby's exclusive breast-feeding with non-exclusive breastfeeding Baby with exclusive breastfeeding have different development with non-exclusive breast-feeding
2.	Baiq Tim-dapartipa Sari, Abdul Salam	Association of exclusive breastfeeding with gross motor development in baby aged 7-12months in area of TanjungKarang Health Centre, Mataram City	Cross-sectional	Independent variable = Exclusive breastfeeding variable = gross motor development among babies aged 7-12month	There is not an association exclusive breastfeeding with gross motor baby aged 7-12months.
3.	Ratna Umi Nurilla, Jumarddin La Fua	The difference of gross motor development in six months baby with exclusive breastfeeding and non-exclusive breastfeeding in Penang-gotu Village, Lambandi-adistrict, KolakaRegency, year 2013	Cohort Retrospective	Independent variable = exclusive breastfeeding variable = Gross and fine motor development among baby aged six months	There is a difference of gross and fine motor development of baby with exclusive and non-exclusive breastfeeding
4.	Supartini	The association of exclusive breastfeeding with gross motor development among children aged 6-36months	Cross-sectional	Independent variable = Exclusive breastfeeding variable = Gross motor development among children aged 6-36months	There is an association between exclusive breastfeeding with gross motor development among children aged 6-36 months



5.	Hermi-nadaDes- itawati, Inge Wattimena, Natalia L Susanti	The dif- ference of gross and fine motor development between baby with exclusive and non-exclu- sive breast- feeding	Cross sectional	Independent Variable =Exclusive breastfeeding Dependent Variable =Gross and fine motor development among chil- dren	There is not different between and fine gross development of baby.
6.	Anggraini	The associa- tion of exclu- sive breast- feeding with motor development of baby aged 6-12months in Sukad- anaham area, Bandar Lampung	CrossSec- tional	Independent variable = Exclusive breastfeeding Dependent Variable = Gross devel- opment baby aged 6-12 months	There is a significant association of exclusive breastfeeding with gross mo- tor develop- ment of baby aged 6-12 months
7	R. Apriana, Bekti	The associa- tion breast- feeding pattern with gross motor development among chil- dren under three years in BojaVil- lage, Boja District,Ken- dal	CrossSec- tional	Independent variable= breastfeeding pattern Dependent variable= gross motor development among chil- dren under three years	There is a signifikan association breastfeeding pattern with gross motor development among chil- dren under three years in BojaVillage, Boja Dis- trict,Kendal

8	Ghanjyati, ul Khudri, Fad- yana, Nova Sylviana	Association between Exclusive Breastfeed- ing and Child Development	CrossSec- tional	Independent variable= Exclusive breastfeeding Dependent Variable=De- velopment	Children had non-exclusive breastfeed- ing history, was 83.3% and 10.85% and children had delayed devel- opment status. There is no significant relationship between histo- ry of exclusive breastfeeding and child development status.
9	Rukanah, Rukanah	Relationship of Breast- feeding with Gross and Fine Motor Skills Development in Infant 6-12 months	CrossSec- tional	Independent variable= Breastfeeding Dependent variable= Gross and fine motor skills devel- opment	There is signif- icant relation- ship between breastfeeding and gross motor skills development There is no relationship between breastfeeding and fe motor skills develop- ment
10	Melati Julizar, Muslim Muslim	Efektifitas ASI Eksk- lusif pada Perkemban- gan Motorik Kasar Bayi di Syamtalira Aron, Aceh Utara	CrossSec- tional	Independent variable= Breastfeeding Dependent variable= Gross motor development	Exclusive breastfeeding is better than non-exclusive breastfeeding for infants aged 0-6 months for infant devel- opment



Based on the results of articles and journals collected and the analysis of the authors, there were inconsistent findings in terms of association of exclusive breastfeeding with gross motor development. There are seven (7) articles which say that there is a relationship between exclusive breastfeeding and gross motor development in infants (3, 4, 6, 7, 9, 10). This is in accordance with the research of Nurhamidi and Mahpolah who showed that all infants who were exclusively breastfed experienced normal gross motor development while infants who were not exclusively breastfed 68.4% (13 people) had normal development and 31.6% (6 people) had delayed development. The analysis results show there was a difference in gross motor development in infants who were exclusively breastfed and those who were not exclusively breastfed ( $p=0.040$ ) (Test, 2016).

Likewise with Nurhila and Fua, who conducted a similar study in Penaggotu Village, Lambandia District, Kolaka Regency in 2013 using bivariate analysis and T test as hypothesis testing. The significance level of  $p = 0.05$ . It was found that the average difference in gross motor development between exclusive breastfeeding and non-exclusive breastfeeding was - 731. The statistical test results obtained a significant value of 0.000 ( $p < 0.05$ ). The results of the analysis obtained the value of  $t = 5.55$ , where  $t$  count is greater than the value of  $t$  table. So it can be concluded that there is a significant difference in the average gross motor development of exclusive breastfeeding and non-exclusive breastfeeding (Nurhila & La Fua, 2015). Infant motor development is influenced by many factors including genetic factors, nutrition, disease, emotion, socioeconomic, exercise, stimulation. Respondents who were exclusively breastfed with gross motor development experienced delays as much as 2 (5.38%) and those who were not given exclusive breastfeeding with gross motor development experienced delays as much as 10 (6.620/o). This situation shows that exclusive breastfeeding has something to do with motor development according to the child's age (Partipasari & Salam, 2019). Anggraini in his research in 2012 also found that the value of the contingency coefficient between exclusive breastfeeding and motor development of infants aged 6-12 months of 0.657 was included in the coefficient interval 0.50 - 0.69 with the "strong" category so that it can be stated that the level of close relationship between exclusive breastfeeding

and gross motor development have a strong relationship (Anggraini, 2017). However, it is different from the two (2) articles that the author found that there is no relationship between exclusive breastfeeding on one side and gross motor development on the other side. Sari and Salam conducted a study on 85 infants aged 7-12 months in the Tanjung Karang District Health Center, Mataram City, it was found that the tendency of exclusive breastfeeding was not related to development rough public health infants who received exclusive breastfeeding between exclusive breastfeeding was not related to development rough public health infants who received exclusive breastfeeding. This can be seen from the data that exclusive breastfeeding in the normal category is greater (66.7%), while babies who receive exclusive breastfeeding with the suspect category are also greater, namely (64.7%). The results of statistical tests also show the value of  $p = 0.444$  where the value of  $p$  is greater than the value of  $p = 0.05$  which is not significant. This means that the relationship between exclusive breastfeeding and gross motor development is only limited to 85 samples in this study and cannot be generalized to the population (Sari BTP, 2017). Desitawati, Wattimena, and Susanti also stated that there was no difference in gross motor development in infants who received breastfeeding. Exclusive and non-exclusive breastfeeding for 45 infants who were researched at the Posyandu at the Surabaya Health Center with the inclusion criteria of infants who were not physically disabled (Desitawati et al., 2020).

Motor development is the development of controlling physical movements through coordinated activities of the nerve centers, nerves and muscles. Control of physical movements stems from the development of reflexion and activities that are present at birth. Infant motor development is divided into two, namely gross motor development and fine motor development. Gross motor development involves large muscles including the development of body movements, balance and movement. Fine motor development, is fine coordination involving small muscles which is influenced by mature motor function, accurate visual function and nonverbal intellectual abilities. The first years of life are a very important period for the development of gross



and fine motor skills. Children have a characteristic that is always growing and developing, monitoring motor development in children under five years of age shows that the percentage of toddlers who experience delays tends to increase to 16% in 2016 (Nurilla & La Fua, 2015).

Motor development is influenced by many factors, including genetic, nutritional, disease, emotional, socio-economic factors, during the period of motor development of children, parents need to pay attention to nutritional needs, the most basic of which is proper breastfeeding, which contains several vitamins and is very important for child development. Child development is influenced by internal and external factors. The dominant influence in the growth of children, especially at the beginning of life until the age of 12 months. The nutrients needed by babies can be met by giving breast milk (ASI). Breast milk is the optimal choice for feeding infants because it contains good nutrients, hormones, immune factors, growth factors, and anti-inflammatory agents (Sari BTP, 2017).

Breastfeeding patterns that affect children's gross motor development are influenced by the following:

#### 1. Genetic Factor

Genetic factors are the basic capital in achieving the final result of the child's growth and development process. Through genetic instructions in the fertilized egg, the quality and quantity of growth can be determined. Characterized by the intensity and speed of division, the degree of sensitivity of the tissue to stimuli, the age of puberty and the cessation of bone growth. It is this genetic factor that influences the gross motor development of children at their growing age.

#### 2. Nutrition Factor

Adequate nutritional intake is needed by children in the developmental period so that they can grow properly. Nutrients, both macro and micro nutrients that enter the child's body play an important role in children. The main source of nutrition for children at the first six months of life is obtained only from breast milk or

This breastfeeding contains good nutrient exclusive breastfeeding. This breastfeeding contains good nutrient for children to get optimal growth and development of children's gross motor nerves at the period.

3. Disease Factor  
Diseases experienced by children are obtained from environmental factors and also genetic factors acquired by children. Diseases suffered can be in the form of degenerative diseases and non-degenerative diseases. Diseases caused by a lack of nutrients that enter the child's body such as marasmus, kwashiorkor or others, can affect the development of gross motor nerves in children.

4. Socio-Economic Factors  
Socio-economic factors are the position of a person in a community, group which is determined by the type of economic activity, education and income. The socio-economic level differed from one family who became the research respondents showed a fairly another. Respondents at a good socio-economic level showed a fairly good gross motor development of children (Nurilla & La Fua, 2015).

#### 5. Emotional Factor

Chaplin defines emotion as something that is aroused from the organism, including changes that are conscious, profound in nature, and changes in behavior. Emotions in children is related with the influence of the environment and also the upbringing that children get from the environment and their parents. It might be breastfeeding does not have a big influence on children's emotional conditions and gross motor development in children.

#### CONCLUSION

Motor development is the development of controlling physical movements through coordinated activities of the nerve centers, nerves and muscles. Control of physical movements stems from the development of reflection and activities that are present at birth. Gross motor development involves large muscles including the development of body movements, balance and movement. Based on the results of research in the literature study, it can be concluded that there is a relationship between exclusive breastfeeding and



gross motor development in infants. Therefore, it is recommended for mothers to continue to provide and pay attention to the intake of exclusive breastfeeding for infants at the beginning of life, especially for infants 0-6 months without being accompanied by other factors and given nutritional education on a regular and continuous basis. Health workers and cadres must play an active role in providing breastfeeding and counseling about the importance of providing exclusive breastfeeding and gross motor development

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