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# Idren\_development\_during\_6-12\_months\_in\_East\_Java,\_Indonesi esia.pdf

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## Islamic perspective on the effect of exclusive breastfeeding on prolactin levels and children development during 6-12 months in East Java, Indonesia

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### Abstract

This article aimed to analyze the Islamic perspective on the effect of exclusive breastfeeding on prolactin hormone level and children development during 6-12 months in East Java. An analytical cross-sectional study was conducted to collect data from 26 mothers with children aged 6-12 months by simple random sampling technique. Data was analyzed by using Mann-Whitney test with significance value  $\alpha=0.05$ . The results showed value of  $p=0.002 < \alpha=0.05$ , which means that exclusive breastfeeding affects the development of children during 6-12 months. This article concludes that exclusive breastfeeding with religious approaches will increase prolactin hormone levels and children's development in accordance with his age. It is expected that mothers should be able to give exclusive breastfeeding, healthy food consumption of food, and stimulate the development of their children.

### Introduction

Six to twelve months of age is the essential period in human life for brain development. Adequate nutritional intake is needed to stimulate the brain development. The brain develops from the womb to 5 years old. Optimal brain growth will affect the development and intelligence of children.<sup>1</sup> Infants aged 0-6 months should be exclusively breastfed, because their body cannot take additional food. People in East Java are mostly provide supplementary food from an early age or before the age of 6 months, because the children are often fussy, it will make them grow faster, or the breast milk does not come out. Breastfeeding alone without any complementary foods until the age of six months old will have tremendous benefits for the

development and growth of infants.

Likewise, mother understands on religion in the matter of breastfeeding affect the baby's prolactin levels. The growth and development in early phase of human life impacts an individual ability in the next phase.

Based on data from the East Java provincial health bureau, the coverage of exclusive breastfeeding in the area in 2016 is approximately 31.2%. In 2017, the rate increased to 61.52%, but this is still far from the target coverage of exclusive breastfeeding in Indonesia, namely 80%. Based on the results of a preliminary survey through interviews with 38 respondents in April 2017, 8 mothers gave exclusive breastfeeding, 23 respondents did not give exclusive breastfeeding to their children because they are working mothers, 5 mothers did not provide it because the milk does not come out, while the two other did not provide it because the infants are being taken care of by their grandmother. Currently, 19% infants in East Java are suffered from developmental delay.<sup>2</sup>

Without the support of religious understanding on the importance breastfeeding, mothers are unable to fully support their children growth. Breastfeeding is mentioned in the Qur'an, Surah Al-Baqoroh 233, which means the mothers shall suckle their children for two years of perfect.<sup>3</sup>

### Materials and Methods

This analytical study included 26 mothers with children aged 6-12 months in East Java as research sample. The sample is chosen by non-probability sampling method and purposive sampling technique. Mann-Whitney test is used to analyze the data.<sup>4</sup>

### Results

The results of Mann-Whitney statistical test showed  $p=0.000 < \alpha=0.05$ . It means that exclusive breastfeeding affects prolactin hormone levels among breastfeeding mothers in East Java (Table 1).

The results of Mann-Whitney statistical test showed  $p=0.002 < \alpha=0.05$ . It implies the influence of religious understandings to exclusive breastfeeding by mothers in East Java (Table 2).

The results of Mann-Whitney statistical test showed  $p=0.022 < \alpha=0.05$ . The result implies that exclusive breastfeeding affects children development in the age of 6-12 months in East Java (Table 3).

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### Discussion

#### Exclusive breastfeeding affects prolactin hormone level

The results of Mann-Whitney statistical test on the relationship of exclusive breastfeeding with the development of children showed significance value  $\alpha=0.05$  and  $p=0.000$ . The result implies that there is a relationship between exclusive breastfeeding with higher levels of prolactin hormone in breastfeeding mothers in East Java. Breast milk contains the components needed for infant development, including taurine, decosahexanoic acid (DHA), arachi-

donic acid (AA), immunoglobulin A (IgA), immunoglobulin G (Ig G), lactoferin, lysozim enzymes, carbohydrates, protein, vitamins, and others. In addition, breastfeeding has been associated with mother-child bonding through the stimulation of the body given by the mother to the baby. Exclusive breastfeeding will increase the rate of Thyroithropin Releasing Hormone (TRH) receptor.<sup>5,6,7</sup> TRH works through cell membrane receptor laktotrop which activates phospholipase C and supports the prolactin gene transcription that increases the release of the hormone prolactin. Vaso Aktive Peptide (VIP) stimulates the release of oxy<sup>1</sup> in through the hypothalamus and affects inhibition of dopamine in the adenylate cyclase<sup>1</sup> resulting in the increase of prolactin. Angiotensin II (Ag II) is a prolactin-releasing factor that is delivered by the hypothalamus to the anterior pituitary by binding with prolactin receptors and helps therelease of prolactin.

Breastfeeding will be more effective if it is conducted for a long period of time, as the interaction allows mothers to give stimulus to the baby through the arms, eye contact, communication between mother and infant, mother's attempt to calm the baby, and the baby's effort to find the nipple. Those activities strengthen the mother-child

bonds. This is consistent with previous study that stated mother-child bonding can be obtained from breastfeeding. It provides opportunities for mother to give stimulus to the baby by touch, put the nipple in the baby's mouth, eye contact, and other forms of interaction that increase the level of prolactin hormone.<sup>8,9,10,11</sup>

#### Relationship of exclusive breastfeeding and religious understanding

The results of the statistical test Mann-Whitney on the relationship of exclusive breastfeeding with mother's religious understanding showed the significance value of  $\alpha=0.05$  with  $p=0.00$ . It implies that there is a relationship between religious understanding and exclusive breastfeeding in East Java. Good religious understanding is shown to increase mothers' willingness to give exclusive breastfeeding. Some respondents with good religious understanding tend to provide full exclusive breastfeeding for their infants. Exclusive breastfeeding is influenced by many factor including self-motivation. In general, working mothers are reluctant to pump their breast milk due to their busy schedules. Therefore, exclusive breastfeeding is strongly influenced self-motivation. Higher self-motivation among the respondents is supported by religious

knowledge. Good religious knowledge will lead human being to be cautious in taking actions, primarily in providing exclusive breastfeeding. Breastfeeding is mentioned in the Qur'an Surah Al Baqoroh: 233 which provisioned mothers to breastfeed their children for two full years.<sup>12,13,14,15</sup> During the first two years, infants need breast milk to support their development. And in the following years, they will look up for other kinds of food and drink. However, breast milk cannot be substituted by any other types of milk.<sup>16</sup>

#### Relationship of exclusive breastfeeding with child development

The results of Mann-Whitney statistical<sup>1</sup> showed the relationship of exclusive breastfeeding with higher levels of the prolactin hormone. It showed the significance value of  $\alpha=0.05$  and calculation results of  $p=0.000$ . The results implied that exclusive breastfeeding affects prolactin hormone level among breastfeeding mothers in East Java.

#### Conclusions

It can be concluded that there is a relationship between exclusive breastfeeding

Table 1. Cross tabulation of exclusive breastfeeding with higher levels of prolactin hormone from January to June 2018.

Breastfeeding	Prolactin hormone levels						Total $\Sigma$	
	Well		Enough		Less		N	%
	N	%	N	%	N	%	N	%
Exclusive breastfeeding	7	100.0	0	00.00	0	00.00	7	100.00
Not exclusive breastfeeding	8	39.32	9	53.68	2	08.00	19	100.00
Total	15	64.31	9	27.69	4	16.00	26	100.00

Table 2. Cross tabulation of exclusive breastfeeding with the understanding of religion January-June 2018.

Breastfeeding	Understanding of Religion						Total $\Sigma$	
	Well		Enough		Less		N	%
	N	%	N	%	N	%	N	%
Exclusive breastfeeding	0	00.0	3	42.86	4	57.14	7	100.00
Not exclusive breastfeeding	5	26.32	4	21.05	10	52.63	19	100.00
Total	5	19.23	7	26.92	14	53.84	26	100.00

Table 3. Cross tabulation of exclusive breastfeeding with the children development in the age of 6-12 months in East Java in January-June 2018.

Breastfeeding	Child development						Total $\Sigma$	
	Normal		Suspect		Unstable		N	%
	N	%	N	%	N	%	N	%
Exclusive breastfeeding	6	85.71	1	14.29	0	00.00	7	100.00
Not exclusive breastfeeding	5	26.32	14	73.68	0	00.00	19	100.00
Total	11	42.31	15	57.69	0	00.00	26	100.00

with higher levels of prolactin hormone in East Java; a relationship between the religious understandings with mothers' willingness to provide exclusive breastfeeding in East Java; and there is a relationship between exclusive breastfeeding with children's development during the age of 6–12 months in East Java.

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