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 α=0.05. The results showed value of p=0.002 < α=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.

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.4

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

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 α=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), arachidonic acid, and various vitamins and minerals. This study also concluded that breastfeeding exclusively for six months in East Java (Table 3).
donic acid (AA), immunoglobulin A (IgA), immunoglobulin G (Ig G), lactoferrin, lysozyme 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 Thyrothrin Releasing Hormone (TRH) receptor. 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 oxytocin through the adenylate cyclase, 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 theerelease 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.

**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 α=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. 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.

**Relationship of exclusive breastfeeding with child development**

The results of Mann-Whitney statistical test showed the relationship of exclusive breastfeeding with higher levels of the prolactin hormone. It showed the significance value of α=0.05 and calculation results of p=0.00. 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

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

<table>
<thead>
<tr>
<th>Breastfeeding</th>
<th>N</th>
<th>Well</th>
<th>%</th>
<th>Prolactin hormone levels</th>
<th>N</th>
<th>%</th>
<th>Less</th>
<th>%</th>
<th>Total</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exclusive breastfeeding</td>
<td>7</td>
<td>0</td>
<td>100.0</td>
<td>0</td>
<td>0,00</td>
<td>0</td>
<td>00.00</td>
<td>0</td>
<td>7</td>
<td>100.00</td>
<td></td>
</tr>
<tr>
<td>Not exclusive breastfeeding</td>
<td>8</td>
<td>39.32</td>
<td>9</td>
<td>53.68</td>
<td>2</td>
<td>08.00</td>
<td>19</td>
<td>100.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>15</td>
<td>64.31</td>
<td>9</td>
<td>27.69</td>
<td>4</td>
<td>16.00</td>
<td>26</td>
<td>100.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Breastfeeding</th>
<th>N</th>
<th>Well</th>
<th>%</th>
<th>Understanding of Religion</th>
<th>N</th>
<th>%</th>
<th>Less</th>
<th>%</th>
<th>Total</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exclusive breastfeeding</td>
<td>0</td>
<td>00.0</td>
<td>3</td>
<td>42.86</td>
<td>4</td>
<td>57.14</td>
<td>7</td>
<td>100.00</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Not exclusive breastfeeding</td>
<td>5</td>
<td>26.32</td>
<td>4</td>
<td>21.05</td>
<td>10</td>
<td>52.63</td>
<td>19</td>
<td>100.00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>19.23</td>
<td>4</td>
<td>26.92</td>
<td>14</td>
<td>53.84</td>
<td>26</td>
<td>100.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**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.**

<table>
<thead>
<tr>
<th>Breastfeeding</th>
<th>N</th>
<th>Normal</th>
<th>%</th>
<th>Child development</th>
<th>N</th>
<th>%</th>
<th>Untestable</th>
<th>N</th>
<th>%</th>
<th>Total</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exclusive breastfeeding</td>
<td>6</td>
<td>85.71</td>
<td>1</td>
<td>14.29</td>
<td>0</td>
<td>00.00</td>
<td>7</td>
<td>100.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not exclusive breastfeeding</td>
<td>5</td>
<td>26.32</td>
<td>14</td>
<td>73.68</td>
<td>0</td>
<td>00.00</td>
<td>19</td>
<td>100.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>11</td>
<td>42.31</td>
<td>15</td>
<td>57.69</td>
<td>0</td>
<td>00.00</td>
<td>26</td>
<td>100.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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.

References