Exclusive Breastfeeding For Infant Growth and Development in Medan

S. Lumbanraja*

Department of Obstetrics and Gynecology, Faculty of Medicine, Universitas Sumatera Utara, Medan, North Sumatera, Indonesia

Abstract. Breast milk is one of the most perfect nutrition to ensure the growth and development of infants in the first 6 months. Exclusive breastfeeding alleged effect on infant growth and development. The purpose of this study was to analyze the influence of exclusive breastfeeding on infant growth and development. This study is a case control study in Sering Primary Health Care Medan in 2014. Anthropometric parameter of subjects’ children were measured and plotted in the WHO graph. Then, subjects were told to undergo a 5 minute interview to analyze the pattern of breastfeeding history. In this study, both infant growth, development, and growth and development were associated with history exclusive breastfeeding (p<0.001). Exclusively breastfed infants have good growth and optimal, in contrast to infants who are not breastfed exclusively have poor growth. It was concluded that there was an influence of breastfeeding with infant growth and development.

Keyword: exclusive breastfeeding, growth, development

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1 Introduction


Exclusive breastfeeding is essential for optimal growth of both physical and mental and infant intelligence (Afifah, 2007). Previous study had showed that there was a significant relationship of exclusive breastfeeding with growth in infants aged 3 to 6 months. Babies who were breastfed exclusively would grow in accordance with their normal growth pattern. The latest study from UNICEF also revealed that infant formula-fed data has 25 times higher mortality than infants exclusively breast-fed. As exclusive breastfeeding alleged effects on infant growth and de-

*Corresponding author at: Faculty of Medicine, Universitas Sumatera Utara, Medan, Indonesia

E-mail address: sarmalumbanraja@yahoo.com

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2. Method


Exclusive breastfeeding is essential for optimal growth of both physical and mental and infant intelligence (Afifah, 2007). Previous study had showed that there was a significant relationship of exclusive breastfeeding with growth in infants aged 3 to 6 months. Babies who were breastfed exclusively would grow in accordance with their normal growth pattern. The latest study from UNICEF also revealed that infant formula-fed data has 25 times higher mortality than infants exclusively breast-fed. As exclusive breastfeeding alleged effects on infant growth and development (Hidayanti, 2011). The purpose of this study was to analyze the influence of exclusive breastfeeding on infant growth and development.

3. Result

In this study, age range of the subjects with or without exclusive breastfeeding were mostly in 20-35 years old (82% and 96%, respectively), educated until senior high school (62% and 88%, respectively), and had income above average (66% and 94%). However, in subjects with exclusive breastfeeding, mostly was primigravida (52%), compared to mostly multigravida (36%) in subjects without exclusive breastfeeding. The children were majority aged 7-9 months and no difference in gender. This study showed a significant difference of infant growth and development between exclusively and not exclusively breastfed infant (both p<0.001). From 50 exclusively breastfed infant, only 8% infant had short growth compared to 66% short growth in not exclusively breastfed infant. About 48% infant that breastfed exclusively showed tall growth also compared to only 4% in not exclusively breastfed infant (Table 1). In exclusively breastfed infant, mostly (94%) had appropriate development compared to only 10% in not exclusively breastfed infant. No exclusively breastfed infant had not appropriate development, but 48% not exclusively breastfed infant showed not appropriate development (Table 2). Overall, this study showed that 96% infants that were breastfed exclusively had normal growth and development while 72% that were not breastfed exclusively had abnormal growth and development (p<0.001) (Table 3).
**Tabel 1.** Distribution of infant growth based on the breastfeeding history

<table>
<thead>
<tr>
<th>Breastfeeding</th>
<th>Infant growth</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Short</td>
<td>Normal</td>
</tr>
<tr>
<td>Exclusive</td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>Exclusi</td>
<td>4</td>
<td>8.0</td>
</tr>
<tr>
<td>Not exclusiv</td>
<td>33</td>
<td>66.0</td>
</tr>
<tr>
<td>Total</td>
<td>37</td>
<td>37.8</td>
</tr>
</tbody>
</table>

**Tabel 2.** Distribution of infant development based on the breastfeeding history

<table>
<thead>
<tr>
<th>Breastfeeding</th>
<th>Infant development</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Appropriate</td>
<td>Undertermined</td>
</tr>
<tr>
<td></td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>Exclusive</td>
<td>47</td>
<td>94.0</td>
</tr>
<tr>
<td>Not exclusiv</td>
<td>5</td>
<td>10.0</td>
</tr>
<tr>
<td>Total</td>
<td>51</td>
<td>51.0</td>
</tr>
</tbody>
</table>

**Tabel 3.** Distribution of infant growth and development based on the breastfeeding history

<table>
<thead>
<tr>
<th>Breastfeeding</th>
<th>Infant Growth and development</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Appropriate</td>
<td>Undertermined</td>
</tr>
<tr>
<td></td>
<td>f</td>
<td>%</td>
</tr>
<tr>
<td>Exclusive</td>
<td>48</td>
<td>96.0</td>
</tr>
<tr>
<td>Not exclusiv</td>
<td>14</td>
<td>28.0</td>
</tr>
<tr>
<td>Total</td>
<td>62</td>
<td>62.0</td>
</tr>
</tbody>
</table>
4. Discuscion

Growth is a major change, the number, size or dimen-sions of cells, organs and individuals measured by weight, length, bone age and metabolic equilibrium (Lidya, 2011, Puskesmas Sering, 2013, PP RI 2012, Ambarwati & Wulandari, 2008). Growth could be measured by length, weight and chemical composition so that growth requires nutrients to produce energy savings, cell division and skeletal usage (Suherni et al, 2009, UU RI 2009, Wulandari & Handayani, 2011, Muslihatun, 2011, Rukiyah & Yulianti, 2012). Growth is the basis for assessing the nutritional ade-quacy of infants (Muhammad, 2012, Suprapti, 2013, Soetjiningsih, 1998). In this study, there was a signif-icant effect of exclusive breastfeeding on infant growth (p<0.001). It can be seen clearly that exclu-sively breast-fed infants tend to have good growth, while those not exclusively breastfed tend to have shorter body growth. The result of this study was in concordance with Lidya (Lidya, 2011)study at Puskesmas Karanganyar.

Some researchers analyzed the difference in growth rates between breastfed and formula-fed in-fants for the first year and were observed later. Birk-beck (1992) showed that breastfed children had better growth parameters. Studies in several developing countries show that the largest causes of nutritional deficiency and growth retardation in children aged 3-15 months are low breastfeeding and poor breastfeed-ing (Lidya, 2012).

The development of child's intelligence was closely related to brain growth. The main factors that affect the child’s brain growth was nutrition (Fatmawati, 2010). Exclusive breastfeeding will improve the physical development and perfect brain. In infancy, there was three important substances associated with brain development and infant intelligence, the deco-sahexaenoic acid (DHA) and arachidonic acid (AA) fatty acids, as well as lactose. Both DHA and AA have been shown to help improve vision and some motor responses in infants and toddlers. In this study, it was showed that there was a significant ef-fect of exclusive breastfeeding on infant development (p<0.001). Babies who got exclusive breastfeeding at 0-6 months of age tend to have appropriate develop-ment (Soetjiningsih, 1998)

Low breastfeeding may be a threat to child growth. In fact, the content of breast milk is rich in carotenoids and selenium, so that breast milk played a role in the baby's immune system to prevent various diseases (Fatmawati, 2010). Each drop of milk also contains minerals and enzymes for the prevention of diseases (Santrock, 2007). According to the ASI Task Force of the Central Board of the Indonesian Pediatricians Association (IDAI), breastfeeding can reduce the per-centage of death to 13% (Dwiharso, 2010). Infant growth in the work area of Puskesmas often found as much as 38% in poor category, and from the data if seen that the tendency of infants who are not exclu-sively breastfed have poorer growth because the ex-clusively breast-fed infants have the best growth. Nu-trition contained in exclusive breastfeeding in accord-ance with the baby's need for growth and they were not present in milk powder or canned milk sold in the market (Prasetyono, 2009).

5. Conclusion

It was concluded that there was an influence of breastfeeding with infant growth and development
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