

EXCLUSIVE BREASTFEEDING AND INFANT PSYCHOMOTOR DEVELOPMENT

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ABSTRACT

Exclusive breastfeeding is known as giving an infant breastmilk for the first six months. Breastmilk is provided to the infant as the only food source, and they will acquire additional food after 6 months of age. Mothers in Indonesia frequently experience an issue related to exclusive breastfeeding. Some of the mothers' perceptions believe that their breastmilk is insufficient, meaning that the mother merely possesses a limited amount of milk. This study seeks to determine the relationship between exclusive breastfeeding and psychomotor development in infants aged 6-9 months in the working area of Buntuila Community Health Center. This study applied a quantitative approach, while data analysis used statistics. It employs analytical observational research, with cross-sectional design. Samples were collected simultaneously. Based on the study findings, infants who were exclusively breastfed experienced normal development were 17 samples (70.8%), questionable development were 7 samples (29.2%), and deviant development by 0 samples (0.0%). While infants who were not exclusively breastfed experienced normal development were 11 samples (35.5%), questionable development were 13 samples (41.9%), and deviant development were 7 samples (22.6). It is undeniable that exclusive breastfeeding has a significant role in infant's psychomotor development. Therefore, it is important to improve multi-stakeholder actions such as health promotion and campaigns on exclusive breastfeeding.

Keywords: *breastfeeding, infant, psychomotor development*

ABSTRAK

Pemberian ASI eksklusif dikenal dengan pemberian ASI selama enam bulan pertama. ASI diberikan kepada bayi sebagai satu-satunya sumber makanan, dan mereka akan memperoleh makanan tambahan setelah 6 bulan. Ibu di Indonesia sering mengalami masalah terkait pemberian ASI eksklusif. Beberapa ibu percaya bahwa ASI mereka tidak mencukupi, artinya ibu hanya memiliki jumlah ASI yang terbatas. Akibatnya, ibu memutuskan untuk memberikan susu formula pada bayi sebagai pengganti ASI. Penelitian ini bertujuan untuk mengetahui hubungan pemberian ASI eksklusif dengan psikomotorik pada bayi usia 6-9 bulan di wilayah kerja Puskesmas Buntuila. Penelitian ini menggunakan pendekatan kuantitatif karena data disajikan dalam bentuk angka, sedangkan analisis data menggunakan statistik. Penelitian ini merupakan penelitian observasional analitik dengan pendekatan cross sectional study. Berdasarkan hasil penelitian, bayi yang mendapat ASI eksklusif mengalami perkembangan normal sebanyak 17 responden (70,8%), perkembangan yang meragukan sebanyak 7 responden (29,2%), dan perkembangan yang menyimpang sebanyak 0 responden (0,0%). Sedangkan bayi yang tidak diberikan ASI eksklusif mengalami perkembangan normal sebanyak 11 responden (35,5%), perkembangan yang meragukan sebanyak 13 responden (41,9%), dan perkembangan menyimpang sebanyak 7 responden (22,6). Pemberian ASI eksklusif memiliki peran yang signifikan dalam perkembangan psikomotorik anak. Oleh karena itu, penting untuk meningkatkan tindakan multi-stakeholder seperti dalam promosi kesehatan dan kampanye ASI eksklusif.

Kata kunci: *ASI eksklusif, bayi, perkembangan psikomotor*

INTRODUCTION

Mothers in Indonesia frequently experience an issue related to exclusive breastfeeding. Some of the mothers believe that their breastmilk is insufficient, meaning that the mother merely possesses a small amount of milk. This causes

mothers to discontinue breastfeeding and switch to formula milk, affecting the infant's future development (Triyani, Meilan and Purbowati, 2019).

Exclusive breastfeeding is known as giving an infant breastmilk for the first six months.

Breastmilk is provided to the infant as the only food source, and they will acquire additional food when they reach the age of six months (Paramashanti, 2019). Exclusive breastfeeding is not widely practiced in several countries throughout the world. According to UNICEF and WHO data, the coverage of exclusive breastfeeding in India is 42%, in China is 28%, in Thailand is 15%, in Brazil is 13.9%, while in America it only covers 6% (UNICEF, 2018).

Nationally, based on the 2018 Indonesia Health Profile, the coverage of infants who receive exclusive breastfeeding is 67.74%, which has exceeded the 2018 Strategic Plan target of 50%. Data from the Gorontalo Provincial Health Office in 2018 indicated that only 5,618 infants (46.9%) received exclusive breastfeeding out of the 11,975 infants which spread across Gorontalo City, followed by Bone Bolango Regency (38.2%), Boalemo Regency (41.5%), Pohuwato Regency (46.2%), Gorontalo Utara Regency (50.3%), and Gorontalo Regency (53.8%). This percentage is still below 80% of the target, which has become a common issue in Gorontalo Province (Badan Penelitian dan Pengembangan Kesehatan, 2019).

Data from the Pohuwato District Health Office in 2020 show that the coverage of babies who receive exclusive breastfeeding is 46.2%, with the percentage at the Paguat Health Center 18.0%, at the Marisa Health Center 15.8%, at the Popayato Health Center 15.1%, at the Patilanggio Health Center 13 % and at the Motolohu Health Center it was 11.6% (Pohuwato District Health Office, 2020). Based on data obtained at the Buntulia Health Center in 2020, the coverage of babies who receive exclusive breastfeeding is only 11.7%.

Infants aged 7-9 months who are not breastfed during six months experience delays in motor development as seen from the child's condition, who has not been able to sit stably for a period and has not been able to crawl according to his age. Further, the for mothers who give their infants exclusive breastfeeding for six months possess normal line in development chart, and their development was in line with their age, including: able to move objects, speaking or babbling the word of "mama" and "dada" and uses various gestures like pointing and shaking his head in response to communication.

The shortage of mothers giving exclusive breastfeeding is caused by the fact that most breastfeeding mothers cannot produce breastmilk and the lack of mothers' insight regarding exclusive breastfeeding. Meanwhile, breastfeeding during the first six months is one of the crucial nutrients for infants.

One strategy to improve baby development is to breastfeed them exclusively. In addition to providing a baby with complete nutritional food, which is a fostered need for infants, breastfeeding boosts a baby's affection, immunity and can help with motor development, personality development, emotional intelligence, spiritual maturity, and healthy interpersonal relationships (Maryunani, 2015)

Exclusive breastfeeding for six months can reduce infant morbidity and mortality, optimize infant growth, boost child's intelligence, and help extend the gap between pregnancies for mothers. Such activities are particularly advantageous in order to protect the infant from various infant mortality diseases (Abani, Paulus and Djogo, 2021).

Wahyuni et al. research in 2019 discovered that there was a relationship between exclusive breastfeeding with normal infant development in 43 babies (87.8%), meanwhile the mothers who did not apply exclusive breastfeeding with normal baby development in 9 babies (25.7%). There is a significant relationship between exclusive breastfeeding and the infant development aged 6-9 months (Sujarwadi *et al.*, 2019). Anggriani's research in 2017, indicated that there is a relationship between exclusive breastfeeding and infants' motor development between the ages of 6 and 12 months. It is identified that the frequency distribution of infant motor development is as many as 30 children (62.5%) with questionable motor development and 3 children (6.2%) with deviant motor development (Anggraini, 2017).

Based on research by Al-Rahmad and Fadillah in 2016, an infant who did not get exclusive breastfeeding had the opportunity to experience psychomotor development below the average standard of two times greater than those who got exclusive breastfeeding. The results revealed that 48.9% of the infant who receives exclusive breastfeeding possess a good motor development

score (9.0) and shows a significant difference compared to motor development in infants who do not get exclusive breastfeeding (Hendra Al-Rahmad *et al.*, 2016). The objective of the study is to determine the relationship between exclusive breastfeeding with infant psychomotor aged 6-9 months in the working area of the Buntulia Health Center.

METHODS

This approach in this research is a quantitative with analytic observational research. Meanwhile, the research design is based on a cross-sectional study. This research was carried out from June to July 2021 at the Buntulia Health Center, Marisa District, Pohuwato Regency.

The research samples are 55 infants aged 6-9 months who were registered and domiciled in the working area of Buntulia Health Center. Sampling technique employed non-probability techniques, i.e., incidental sampling techniques.

In this study, the relationship between exclusive breastfeeding and motor development for infants aged 6 to 9 months was examined using bivariate analysis and the Chi-square test.

RESULTS AND DISCUSSIONS

Data regarding samples' characteristics are presented in table 1.

Table 1. Samples' characteristics

No	Characteristics	Categories	n	%
1	Mothers' age (years)	15-25	34	61.82
		26-35	20	36.36
		>35	1	1.82
2	Mothers' education level	Elementary school	6	10.91
		Junior school	9	16.36
		Senior school	27	49.09
		Bachelor degree	13	23.64
3	Mothers' occupation	Housewife	46	83.64
		Private employee	4	7.27
		Civil servant	9	9.09
4	Weight (kg)	3-6	24	43.64
		7-9	31	56.36
5	Length (cm)	52-62	41	74.55
		66-76	14	25.45

Based on table 1 of age characteristics indicate that 34 samples (61.82%) were between the ages of 15 and 25, while 20 samples (36.36%) were between the ages of 26 and 35, and there was only one respondent who was in the range of 36-45 years (1.82).

There are 24 infants (43.64%) who weigh 3-6 kg, and there are 31 infants (56.36%) who weigh 7-9 kg and 41 infants (74.55%) who have a body length of 52–65 cm, and there are 14 infants (25.45%) who have a body length of 66–76 cm.

Table 2. Cross Tabulation of Psychomotor Development and Exclusive Breastfeeding

Exclusive Breastfeeding	Psychomotor Development						Total		Pvalue
	Abnormal		Questionable		Normal		n	%	
	n	%	n	%	n	%			
No	7	22.6	13	41.9	11	35.5	31	100.0	0.003
Yes	0	0.0	7	29.2	17	70.8	24	100.0	
Total	7	22.6	20	71.7	28	106.3	55	100.0	

Exclusive breastfeeding

According to Rahayu et al. (2019), mothers who give birth at healthy reproductive age (20-35 years) are more likely to provide exclusive breastfeeding than mothers who give birth at risky reproductive age (35 years). It is believed that the ability to breastfeed has reduced along with the aging of the organ systems since age over 35,

which is an age with a high risk of pregnancy and childbirth (Rahayu *et al.*, 2019).

This research discovered that respondents with an age range of 15-25 years (61.82%) gave their children excessive exclusive breastfeeding since the mother's breastmilk is abundant, so the mother did not need additional formula milk. Meanwhile, a 42-year-old mother, stated that she was starting

to experience hormonal changes, which caused decrease in milk production and decided to give formula milk to the children. This statement was obtained from the results of the interview with respondents. The result was in line with Ratna's research that stated mothers aged 20-35 years belong to the group of women in childbearing age, where a woman at this age is considered mature and able to reproduce, including in exclusive breastfeeding. Women at that age are regarded as being physically and psychologically prepared for childbirth and capable of caring for their children.

Furthermore, the other factor of earlier discussion is inadequate breastmilk. The low milk production was caused by incorrect nipple attachment, lack of intensity of breastfeeding, medication and contraceptive usage, as well as lack of insight and family support (Arifiati, 2017). This research discovered 24 respondents (housewives) did not provide exclusive breastfeeding to their children due to a lack of sufficient breast milk and preferred the practical approach of using a milk bottle.

Several studies showed that mothers with a poor insight of breastfeeding expertise Perceptions of Insufficient Breast Milk (PKA) (58.6%) compared to mothers with good insight (22.2%). PKA is influenced by three factors, including maternal factors, infant factors, and lactation (Prabasiwi, Fikawati and Syafiq, 2015; Murni, 2019). Further, it was significantly proven that maternal factors (employment status and mother's insight), infant factors (breastfeeding habits and breastfeeding attachment), and lactation factors (early initiation of breastfeeding, hospitalization, and family support) influence PKA.

According to Darsini et.al (2019), insight is a crucial component in the development of someone's actions (Darsini, Fahrurrozi and Cahyono, 2019). A mother's formal education affects the level of the mother's insight, such as low and high formal education. However, the research conducted by the author found that mothers with high education higher levels of education did not exclusively breastfeed their children, in contrast to mothers with low levels of education.

Several factors influence breastfeeding. According to Arifiati (2017), first is the mother's occupation. Working mothers will tend to leave

their infants compared to housewives' mothers since they have many opportunities to breastfeed (Arifiati, 2017). In this study, it was found that six of the respondents had stable employment but did not exclusively breastfeed their children. This is due to the fact that these respondents claimed they were too busy at work to have the time to breastfeed their children, so they opted to give formula milk instead. In this case, a total of 31 respondents (56.4%) did not provide exclusive breastfeeding to their children, meaning that exclusive breastfeeding for infants aged 6-9 months is still poor.

The research result is in accordance with previous research by Purvitasari and Purbasari (2019), which concluded that there is a significant relationship between the mother's occupation and the behavior of exclusive breastfeeding, with a value of $p\text{-value} = 0.041$ (Purvitasari and Purbasari, 2019). This demonstrates that, in comparison to housewives mother it is more difficult for working mothers to breastfeed their infants exclusively. Working mothers find it difficult to exclusively breastfeed their infants because of their busy schedules outside the home. Similarly, research conducted by Sihombing (2017) states that there is a relationship between maternal employment and exclusive breastfeeding behavior because the leave period for working mothers will affect exclusive breastfeeding to their babies, and working mothers will give formula milk to their babies (Sihombing, 2018). This is due to the lack of maternal knowledge about breastfeeding. Additionally, there is a relationship between maternal employment and exclusive breastfeeding behaviour because working mothers' leave periods will affect their ability to exclusively breastfeed their infants, and working mothers will prefer to give formula milk. This was due to the lack of maternal insight into breastfeeding.

Infant Psychomotor Development

Based on the study's results, it was found that 28 infants (50.9%) had normal development, while those who have questionable development were accounted for 20 infants (36.4%), and other 7 infants (12.7%) were deviated. Sukesi (2016) claims that one factor that influences infant's development is prenatal factor (during pregnancy), which is related to maternal nutrition

during pregnancy. Mother's nutritional intake and status will greatly affect the fetus' growth in the womb. When the mother's nutritional status is poor before or during pregnancy, it will cause low birth weight babies (LBW), resulting delays in brain development. In addition, Soesilowindradini (2017) stated that one of the factors that influence the development of infant in the postnatal period (the period after pregnancy) is infant nutrition (Soesilowindradini, 2017). Infant growth and development require nutritious food with sufficient portions. If the infants' nutritional intake is lacking, it will hinder the child's growth and development.

In using the child development pre-screening questionnaire (KPSP), when the infant's age is in between, the KPSP used is smaller than the infants' age. Therefore, infants between the ages of 7 and 8 months will use KPSP for infants aged six months. Observations results show that the infants were able to follow the movements of other people by moving his head from one side to the other, was able to hold objects for a few seconds when brought close to the object, was able to maintain an upright and stable head position, was able to lift his chest with his arms in a prone position, able to maintain a stiff neck when his hands are pulled slowly to a sitting position (Napitupulu, 2018).

This was found in 28 children (50.9%) who experienced normal development and were able to perform all the movements listed in the statement based on the KPSP. Meanwhile, 20 infants (36.4%) were questionable in development, the infants could only make 7 movements out of 10 KPSP statements. In addition, in 7 infants (12.7%) who had deviant development could only make 6 movements out of 10 KPSP statements. This is due to slow growth and development while the infants were still in pregnancy. Insufficient mother's intake in fulfilling fetal nutrition affects the infants' development, the reason for this is that the mother experiences nausea and difficulty in consuming food which triggers insufficient intake to fulfill mother's nutrition during pregnancy. This statement was obtained by the author when conducting interviews with the mothers. This study's results align with research conducted by Napitupulu (2018), which states that nutritional status affects infants' motor development. The better the nutritional status, the better the child's development, and vice versa.

Relationship between exclusive breastfeeding and infants' psychomotor

Sutiono (2019) claims that exclusive breastfeeding affects an infant's motor development (Sutiono, 2019). Generally, children who have been breastfed since birth will experience faster development compared to children who receive formula milk. The motor development includes body movement ability, creativity, social skill, and emotional development. Based on the questionnaire results, most of the infants who received exclusive breastfeeding experienced normal development, this was because mothers often visited the Integrated Healthcare Center and monitored their infants' early development and provided motor stimulation to their babies.

Based on Chi-Square test results, it was found that the p-value was $0.003 < 0.05$, which means that there is an association between exclusive breastfeeding and the development of infants in the Working Area of the Buntulia Health Center. With exclusive breastfeeding, development can occur in gross motor skills, fine motor skills, speech and language skills as well as social skills and independence, where these skills show behavior that moves the large muscles of the arms, legs, and torso, for example, lifting the head and sitting.

The results of this study are in line with research conducted by Triyani et.al (2019), which confirms that the duration of exclusive breastfeeding correlates with child development statistically. Toddlers with a long history of exclusive breastfeeding for no more than 4 months experienced deviant development, namely 24%, on the other hand, the majority (47%) of toddlers who received exclusive breastfeeding >4 months (47%) had developments that did not deviate or normal (Triyani, Meilan and Purbowati, 2019). This situation occurs as children given exclusive breastfeeding will grow according to the growth and developmental stage.

CONCLUSION

Exclusive breastfeeding is undeniable has significant roles in children's psychomotor development. Therefore, it is important to improve multi-stakeholders' actions such as in health promotion and exclusive breastfeeding campaign.

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