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The Influence of Anemia History in Pregnant Mothers Towards the Growth and Development of Infants

Juana Linda Simbolon[1*)], Emilia Silvana Sitompul[2]

[1,2] Poltekkes Kemenkes Medan

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A B S T R A C T

Anemia in pregnancy still becomes a significant problem globally, impacting the mother and the fetus she contains. The effects of anemia on the fetus include low birth weight, lack of oxygen in the womb, and spontaneous and regular breathing failure. These disorders can hinder the growth and development of the baby become not optimal. Early detection is important to determine if there are growth and development disorders in a later period so that appropriate treatment can be carried out immediately and adverse effects can be minimized. This type of research is quantitative analytic, and the study design used is a cross-sectional study. The population in this study were mothers with a history of pregnancy with anemia and infants 0-3 months. Obtained a sample of 112 people. Data analysis using univariate analysis, bivariate with Chi-square with a 95% confidence level, and multivariate using multiple logistic regression test. The results of this study show there is an influence of age, education, parity, nutrition history of anemia in pregnant women with growth and development of infants aged 0-3 months. The nutritional variable is 3,643 times more significant in influencing the baby's growth and development. Mother is expected to provides exclusive breastfeeding for infats aged from 0-6 months. The application of the Primaku soft application developed by IDAI is a breakthrough in the world of child health that can help parents understand the health conditions of their children online.

Kata kunci:

Ibu dengan riwayat anemia
Tumbuh Kembang
Aplikasi Primaku

**) corresponding author*

Juana Linda Simbolon

Poltekkes Kemenkes Medan, Medan, Indonesia

Email: simbolonjuana@gmail.com

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A B S T R A K

Anemia pada kehamilan masih merupakan masalah utama di dunia yang memiliki dampak pada ibu dan janin yang dikandungnya. Dampak anemia pada janin diantaranya berat badan lahir rendah, kekurangan oksigen dalam kandungan serta kegagalan nafas spontan dan teratur. Gangguan tersebut dapat menyebabkan pertumbuhan dan perkembangan bayi tidak optimal. Deteksi dini merupakan hal yang penting untuk mengetahui adanya gangguan tumbuh kembang pada periode lebih lanjut sehingga penanganan yang tepat dapat segera dilakukan dan efek buruk dapat diminimalkan. Penelitian ini menggunakan metode kuantitatif analitik dengan desain yang digunakan adalah *Cross-sectional Study.* Populasi dalam penelitian ini adalah ibu dengan riwayat hamil dengan anemia dan bayi 0-3 bulan. Didapatkan sampel berjumlah 112 orang. Analisa data menggunakan analisis univariat, bivariat dengan *Chi-square* dengan derajat kepercayaan 95 %, dan *multivariat* dengan menggunakan uji regresi logistik berganda. Hasil penelitian ini menunjukkan ada pengaruh umur, pendidikan, paritas, nutrisi riwayat anemia ibu hamil dengan tumbuh kembang bayi usia 0-3 bulan.Variabel nutrisi 3,643 kali lebih besar berpengaruh terhadap tumbuh kembang bayi. Ibu diharapkan memberikan ASI Eksklusif 0-6 bulan. Penerapan *soft* aplikasi Primaku yang dikembangkan oleh IDAI merupakan sebuah terobosan di dunia kesehatan anak dapat membantu para orang tua memahami kondisi kesehatan buah hatinya secara *online.*

INTRODUCTION

Anemia in pregnancy is still considered a significant problem globally that impacts the mother and the fetus in their womb. Anemia in pregnancy is defined as a condition when the hemoglobin level in the blood is less than 11 g/dl. The result of the study (Simbolon and Sitompul, 2021) showed that on average 1 of 2 pregnant women whose hemoglobin levels were measured had anemia (96 responden examined pregnant wome) and 41 respondent (43%) had anemia. The effects of anemia on the fetus include low birth weight, lack of oxygen in the womb, and spontaneous and regular breathing failure. These disorders can hinder the growth and development of the baby; hence it becomes not optimal. Anemia is a public health problem that still needs attention. It also impacts the welfare of the next generation by affecting birth outcomes, growth, and development of children. (Yuyun Christyanni & Elsi Dwi Hapsari, 2017).

Children are the nation's next generation. They are the foundation and hope of parents. The government needs children of high quality to achieve a promising future. Therefore, it is essential to pay attention to the growth and development of children. The toddler period is the first five years, which is critical in child growth and development, and this period is the basis for further growth and development. During this period, toddlers' brains are more elastic than adults', so they are very open and sensitive in accepting various kinds of learning and enrichment, both positive and negative knowledge. The development of toddlers will be more optimal if the environment provides positive support or vice versa. (Hapsari Maharani Sugeng, 2019) .

According to the Indonesian Health Profile in 2019, the number of Toddlers aged 0-4 years in Indonesia is relatively high, with a total of 23,604,923 (10%) of the total population, while in North Sumatra, the estimated number of Toddlers is 1,501,845 (Kemenkes RI, 2020). The children's golden age is between 0-5 years old–the child's brain and physical body experience rapid development in this period. The age of 0-5 years is a critical period for children because, at this time, the foundation of how the children will live their life is determined (IDAI, 2017) .

The baby's health is the most important thing for parents, and it needs to be considered for the excellent growth and development of children from birth to adulthood. The environment has a significant impact on children's development, especially if the environment is unsupportive, such as having poor nutritional intake, not getting adequate health services, and lack of stimulation. These factors will negatively impact children's development. The government can handle this problem through the immunization program. The program includes the provision of immunization vaccines, weighing, measuring height, and health consultations for the children. This program can be carried out at the Community Health Center (Puskesmas) or the Integrated Service Post (Posyandu) (Herlina, Juni 2018).

Periodic measurement of children's weight is crucial to detect cases of malnutrition. Changes in body weight are one indicator that is sensitive enough to monitor a child's growth. By diligently weighing the child's weight, the child's growth can be monitored intensively to detect any anomalies immediately. The author considers the KMS (Kartu Menuju Sehat) or Health Card as a piece of paper is less effective. Based on the results of interviews that have been conducted, there are still many cases where parents do not bring KMS when immunizing or weighing their baby's weight every month, and there are cases where the KMS gets damaged easily. This is because until now, Indonesia does not have a KMS information system that can be utilized, especially on a national scale (Lazuardy S. A., 2018).

Windasari and Yana created a Mobile KMS (M-KMS) application. This KMS model was created in line with the increasing number of parents who use mobile devices in their daily activities. So, to overcome the frequent loss of KMS in the form of paper and facilitate monitoring of children's growth, M-KMS was made. Several digital KMS implementations have been published and used. For example, KMS Online, which Javakedaton Indonesia developed, and ***PrimaKu***, developed by the Indonesian Pediatrician Association (IDAI). The two implementations are a breakthrough in child health because they can help parents understand their children's health conditions online.

Children's Health Services are disrupted due to the Covid-19 pandemic. This condition increases the risk of disease and malnutrition, which should be prevented. IDAI advises parents not to delay immunizations and still control the growth and development of children. It is crucial to be carried out at home. The basic needs of children's growth and development during the pandemic must be met. Conducting an intervention for early deviations in child development is also crucial because optimal child growth and development will determine the next generation of the nationa (Rahayu, 2020).

Growth can also be interpreted as an increase in the size and number of cells in all body parts that can be measured quantitatively, such as height, weight, and head circumference. Development is an increase in the function of the body's organs that can be achieved through learning. The development consists of moving or gross and fine motor skills, hearing, seeing, communicating, speaking, emotional-social, independence, intelligence, and moral development (Juana Linda Simbolon, 2021). Child development is closely related to the children's nutritional status. The destructive impact caused by nutritional problems in the first 1000 days of life is disruption of brain development, intelligence, impaired physical growth, and metabolic disorders. Moreover, it can decrease cognitive ability and learning achievement, decrease immunity, make children sick easily, and cause a high risk of diabetes, obesity, heart, blood vessel disease, cancer, stroke, and disability in old age. All of this will reduce the quality of Indonesia's human resources, productivity, and competitiveness of the nation (Entoh, 2020).

According to (Ministry of Health of RI, 2000), stimulation of growth and development during the Covid-19 pandemic can be performed in a pleasant atmosphere anytime. Furthermore, the monitoring (detection) of growth and development can be performed by each family every month according to the child's age. The implementation can refer to the MCH handbook for 0-3 months, 6- 12 months, 1-2 years, 2-3 years, 3-5 years, and 5-6 years. The challenge of midwifery services during the Covid-19 pandemic is that mothers' knowledge regarding child growth and development is minimal, and not all mothers with toddlers are socialized or know about this matter.

The growth and development of children are influenced by exclusive breastfeeding at the age of 0-6 months of birth. It is because breast milk is the perfect nutrient for babies. Breastmilk contains antibodies that make children rarely get sick, so they will not experience weight loss. Moreover, there is a bond of affection between mother and child by breastfeeding; hence it affects the development of the fetus (Yuniarti, 2015). Stimulation is an activity to stimulate children's fundamental abilities to grow and develop optimally. Every child needs to get regular and continuous stimulation as early as possible. Stimulation can be provided

by the closest people, such as parents. According to the result of the study, the lack of stimulation in children will cause deviations in growth and development to permanent disturbances (Lindayani, 2020).

In the implementation of monitoring or early detection of growth and development, the role of health workers, in this case, is that midwives determine the success of achieving coverage of early detection and stimulation of growth and development of children under five. In carrying out its role, the midwife is responsible for direct early detection and for optimizing parental awareness in monitoring and providing stimulation for growth and development in children according to age so that delays in achieving growth and development can be minimized (Oktiyani, 2015).

Data shows that more than a third of children in the world experience growth and development disorders, both physically and mentally. It is estimated that 5 to 10% of the child population has developmental delays. (The Ministry of Health of R.I, 2013). In recent years, children's developmental problems such as motor delays, language, behavior, autism, and hyperactivity have increased; the incidence in the United States ranges from 12-16.6%, Thailand 24%, Argentina 22.5%, and Indonesia between 13%-18% (Pujiawati D, 2013). Around 16% of children under five years old (toddlers) in Indonesia experience neurological and brain development disorders ranging from mild to severe (I.P. Windasari, 2016).

Primaku is an application that makes it easier for mothers/parents to monitor their child's growth and development regularly and continuously, and IDAI also recommends this application. Its main features are immunization schedules, age-appropriate child growth charts, age-appropriate child developmental stages, and age-appropriate child health articles. Growth charts include WHO and CDC charts, growth interventions, add children data, child nutrition recommendations (Sitompul, 2021). Child development related to KSP questions, child development stimulation related to KSP questions, and developmental stimulation, which performs according to the child's age and is available for all ages. Articles include health articles, search articles, filter articles, old articles that work offline (Dianda, 2017)

One of the ways to prevent new cases during the COVID-19 pandemic is the policy of staying at home stipulated by the government. With the development of technology and to support the stay-at-home policy, mothers who have babies can assess the growth and development of babies by using soft applications so that deviations can be prevented from an early age. This motivates the author to examine the influence of anemia's history in pregnant women on the growth and development of infants 0-3 months during the covid 19 period by using a soft application and its recommendations in North Tapanuli Regency in 2021.

Identification of Research Problem

Using soft applications, is there an effect of a history of anemia in pregnant women on the growth and development of 0-3 months babies during the COVID-19 pandemic?

Hyphothesis

1. There is an effect of maternal age with a history of anemia on the growth and development of 0-3 months babies using soft applications
2. There is an influence of maternal education with a history of anemia in pregnancy on the growth and development of 0-3 months babies using soft applications
3. There is an effect of maternal parity with a history of anemia on the growth and development of infants 0-3 months using soft applications
4. There is an influence on the nutrition (Breastfeed) of pregnant women with anemia on the growth and development of babies 0-3 months by using soft applications

RESEARCH METHOD

Research Type and Design

The type of research is quantitative analytic, and the design used in this study is a cross-sectional study. This method and type of study are applied to determine the effect of a history of anemia in pregnant women on babies' growth and development of babies 0-3 months during the COVID-19 pandemic using a soft application in North Tapanuli Regency.

Population and Sample

1. Population research
   The population in this study were mothers with a history of anemia during pregnancy and infants 0-3 months. This research was conducted in June-October 2021 in the working area of the Health Office of North Tapanuli Regency.
2. Sample of Study
   The samples in this study were mothers with a history of pregnancy with anemia and infants 0-3 months who met the following criteria:
   a. Inclusion criteria: Mothers and infants 0-3 months who are willing to be respondents with a history of pregnancy with anemia.
   b. Exclusion criteria: Mother who is unwilling to be a respondent.

   The sampling in this study used a purposive sample of 112 people.

Operational Definitions

Growth is an increase in the size and number of cells in all body parts that can be quantitatively measured, such as height, weight, and head circumference. Development is the improvement in the function of the body's organs that can be achieved through learning, consisting of the ability to move gross and fine, hearing, sight, communication, speech, emotional-social, independence, intelligence, and moral development.

The instrument used to monitor the baby's growth is by entering the results of weighing, the results of body length measurement and the results of head circumference measurement analyzed using the ***Primaku*** application with the interpretation results, namely:

1. 0 = normal,
2. 1 = abnormal

Meanwhile, to monitor the development of a 3-month-old baby, a questionnaire sheet consisting of 8 questions from the ***Primaku*** application was used, namely:

1. Can the baby lift their head to 45 degrees without any help
2. Can the baby move their head from left/right to the center
3. Can the baby see/stare at your face
4. Does the baby babble spontaneously or react by babbling
5. Do babies like to laugh loudly
6. Does the baby react to loud noises

7. Does the baby smile back when spoken to/smiles
8. Can the baby recognize their mother by seeing, smelling, hearing, or touching.

Data Source

1. Primary Data: The primary data used is the result of interviews with the respondents obtained using a questionnaire on maternal age, education, parity, nutrition. The result of the baby's measurement includes weight, the results of measuring the length of the body, and the head's circumference.
2. Secondary data: The secondary data is obtained from the Health Office of North Tapanuli Regency, and Public Health Centers in the working area of the North Tapanuli Health Office. The secondary data is in the form of data on geographic description, demographics and number of mothers who have babies 0-3 months with a history of anemia in pregnancy, and data supporting research implementation.

Research Instrument

The instrument in this study is used to determine infant growth and development stages with the ***Primaku*** application. If the results of the interpretation of growth and development are not appropriate, early stimulation is needed to provide first aid for the baby's growth and development.

Data Processess and Analysis

1. Data Processing, in this study, the data that has been collected are processed through the following processes: Editing (checking), Coding (ticking the code), Data Entry, Data Cleaning, Tabulating (data tabulation).
2. Data Analysis, data analysis in this study was carried out based on the data obtained. The data are then analyzed and reinterpreted as follows:
   a. Univariate Analysis
      In this study, univariate analysis was carried out by calculating the frequency of research data results based on variables that produced descriptive distributions and percentages.
   b. Bivariate Analysis
      Bivariate analysis was used to analyze two variables, namely one independent variable and one dependent variable. It was conducted to explain the effect of the independent variable with the dependent variable statistically. The analysis used to test the data uses the Chi-Square statistical formula. With a degree of confidence, p = 0.05. If p < 0.05, then the calculation result is significant (significant), and if p 0.05, the calculation result is not significant with a 95% confidence level.
   c. Multivariate analysis: This analysis was used to find the most dominant factor (independent variable) that influences the dependent variable as indicated by the regression coefficient value. Multivariate analysis was performed using a multiple logistic regression test

RESULT AND OUTPUT ACHIEVED

This study was carried out in the working area of the North Tapanuli Health Service, namely Siatas Barita Health Center, Hutabaginda Health Center, Situmeang Habinsaran Health Center, Sitadatada Health Center, Parsingkaman Health Center, Sipahutar Health Center, Paniaran Health Center, Parmonangan Health Center, Simagumban Health Center, Promise Angkola Health Center, Silangit Health Center, Muara Health Center, Public Health Center Siborongborong, Aek Raja Health Center, Situmeang Habinsaran Health Center, Butar Health Center, Garoga Health Center, Sarulla Health Center, Pangaribuan Health Center, Onan Hasang Health Center, Lumban Sinaga Health Center, Sipultak Health Center. The results of the maternal and child health report (KIA) from the Health Office of North Tapanuli Regency, the number of pregnant women was 1,932 people in June 2021. The number of toddlers in June 2021 was 22,678, with the number of very short toddlers of 361 and short toddlers of 1,298. Respondents in this study were mothers who had babies 0-3 months with a history of anemia during pregnancy, namely 112 people.

The study results were based on age, mothers who had babies aged from 0-3 months, the youngest mother was 19 years old, and the oldest was 44 years old. The study results were based on the lowest education level, namely the elementary school level and the highest at the undergraduate level. The results of the study are based on parity with the least one and the most parity 7.

The univariate analysis performed in this study included the independent variables, namely age, education, parity, and nutrition (exclusive breastfeeding), as follows:

Table 2.1
Frequency Distribution of Respondents by Age, Education, Parity and Nutrition (Exclusive Breastfeeding)

Independent Variable		Frequency	Percentage
Age	25-35 years old	53	47,3
	<25 and >35 years old	59	52,7
Education	Bachelor	16	14,3
	Non-Bachelor	96	85,7
Parity	1-2	57	50,9
	>2	55	49,1
Nutrition	Non-Breastmilk	51	45,5
	Breastmilk	61	54,5
Dependent Variable			
Growth and Development	Normal	86	76,8
	Abnormal	26	23,2

Based on table 5.1, it can be seen that the number of respondents based on age <25 and >35 years is 59 people (52.7%). The majority of non-bachelor respondents is 96 people (85.7%). The majority of parity 1-2 respondents is 57 people (50.9%). The majority of respondents based on breast milk nutrition is 61 (54.5%). The majority number of normal babies' growth and development is 86 (76.8%).

Bivariate Analysis

In the bivariate analysis, cross-tabulation was performed between the independent variables. The independent variables include age, education, parity, and nutrition. The dependent variable is infant growth and development. To determine whether there was a significant effect between the two variables; the chi-square test was carried out as follows:

Table 2.2 The Influence of Age, Education, Parity, and Nutrition on Baby Growth

Variable	Babies Growth and Development				N	Total	*p-value*
	Normal		Abnormal				
	n	%	n	%		%	
Age							
<25 and > 35	38	64,4	21	35,6	59	100	0,001
25-35	48	90,6	5	9,4	53	100	
Education							
Bachelor	6	37,5	10	62,5	16	100	0,001
Non-Bachelor	80	83,3	16	16,7	96	100	
Parity							
1-2	49	86,0	8	14,0	57	100	0,019
>2	37	67,3	18	32,7	55	100	
Nutrition							
Breastmilk	52	85,2	9	14,8	61	100	0,020
Non-Breastmilk	34	66,7	17	33,3	51	100	

The Influence of Mother's Age on Babies' Growth and Development

Table 5.2 shows that in the category of mothers aged <25 and >35, there are 38 (64,4%) normal and 21 (35,6%) abnormal babies' growth and development. The result of the statistic test obtains a value of p<0,001. It means that there is an influence of the mother's age on the baby's growth and development.

Age is a person's age calculated from birth to the end of their life. The family health program policy states that the safe age for a mother to give birth to a child is between 25 to 35 years. The factor of age is related to how someone carried out their work; the older a person gets, the more mature they become, and they can absorb more information too. This study is in line with the results of Widyawati's research, 2017. There is an influence of a mother's age on child growth and development.

The Influence of Mother's Education on Babies' Growth and Development

Table 2.2 shows that the respondent with a bachelor's degree has 6 people with normal babies' growth and development (37,5%) and 10 people with abnormal babies' growth and development (62,5%). Meanwhile, the non-bachelor respondent obtains 80 normal babies' growth and development (83,3%) and 16 abnormal babies' growth and development (16,7%). The result of the statistic test obtained a score of p<0,001. It means an effect related to the mothers' education on the babies' growth and development.

Education is crucial for a person to provide the ability to think, examine and understand the information obtained with more rational considerations. A good education will also give a person a good ability in making decisions regarding family health, especially baby growth and development.

Education is essential in changing behavior, especially in utilizing health services, because educated women tend to improve the health status of their families by seeking better services.

Thus, these results follow the opinion of Notoadmodjo (2003). Education determines a person's mindset and insight. The higher a person's education, the higher the knowledge will increase as well. Adequate education is the basis for developing insight into the means. When someone receives an adequate education, it will be easier to motivate and determine their way of thinking in accepting the community's knowledge, attitudes, and behavior. A mother's low education might slow down the adoption of new knowledge.

The Influence of Parity on the Babies' Growth and Development

Table 2.2 shows that in the variable of parity 1-2, the data show that there are 49 people (86%) with normal babies' growth and development and 8 abnormal growth (14.0%). In contrast, parity >2 shows 37 normal growth and development (67.3%) and 18 abnormal growth and development (32.7%). Statistical test results obtained a p-value <0.019, meaning that maternal parity affects infant growth and development.

The visit to integrated service posts or ***Posyandu*** is related to the availability of time for mothers to detect the growth and development of their babies. Therefore, the number of children can affect whether the mothers have time to leave home to get health services for their children. If a mother has many children, it will require much time for mothers to take care of their children, so the availability of time to visit integrated service centers (Posyandu) is not that much.

The influence of nutrition on the Babies' Growth and Development

Table 2.2 shows that there are 52 (85,2%) normal and 9 (14,8) abnormal growth and development in the category of Nutrition (Exclusive Breastfeed). Meanwhile, the non-breastfeeding category shows 34 (66,7%) normal and 17 (33,3%) abnormal growth and development. The statistic result obtains a value of p<0,020, which means that nutrition affects the babies' growth and development.

Nutrition has an essential role in babies' growth and development. It is necessary to provide the best nutrition for babies from the beginning of life. At the beginning of their life, babies need adequate nutrition for their growth and optimize the entire baby growth and development process. Infant nutrition aged 0-6 months is breast milk (ASI). Breastmilk is a complex biological fluid that contains all the nutrients needed for a baby's growth and development. Its nature is very easily absorbed by the baby's body, making it the primary nutrient that best meets baby growth and development requirement. Breastmilk (ASI) is the most decisive factor in the growth and development of infants aged from 0-6 months. Before reaching the age of 6 months, the baby's digestive system shall not digest food other than breast milk. Therefore, exclusive breastfeeding is the right choice and is highly recommended for the first 6 months. More and more formula milk is circulating in our community. Many mothers choose to give their babies breast milk mixed with formula milk; some even only give formula milk to their children. Meanwhile, many substances of breast milk cannot be found in formula milk. One example is the substance of immunoglobulins that function for the baby's immune system. It can only be found in breast milk (ASI). Exclusive breastfeeding provides many benefits for babies, including the composition of breast milk according to the baby's needs, calories from breast milk meet the needs of babies until the age of six months, faster psychomotor development, supports cognitive development, supports vision development, strengthens the bond between mother and child and as the foundation of confident personality development (Mukhlis, 2019).

The results of Oktiyani research (2015) show differences between exclusive breastfeeding and formula milk on the growth and development of infants aged 0-6 months in the work area of Dinoyo Public Health Center Malang City. Babies

with an exclusive breastfed have a better growth rate than babies fed with formula milk.

Mukhlis (2019) mentioned that there is a relationship between exclusive breastfeeding on the gross motor development of toddlers. Non-exclusive breastfeeding has a higher risk of 5.6 times higher for the babies' gross motor development become slower or different from the others' gross motor of kids with the same age and are exclusively breastfed.

The results of this study are different from Dini's research with the title of 0-6 month baby growth and development according to the status of breastfeeding at the Telaga Biru Health Center Pontianak. The study results show that 28 babies received exclusive breastfeeding with an average growth rate of 11.11, while babies who received non-exclusive breastfeeding were 51 people with an average growth of 11.67. The results of the statistical test are p = 0.144. There was no significant difference in the average growth and development of infants 0-6 months who received exclusive breastfeeding with non-exclusive babies (Damayanti, 2015).

Multivariate Analysis

The multivariate analysis aims to find the most dominant factor (independent variable) affecting the dependent variable (baby growth and development), indicated by the regression coefficient value. The following are the results of the multiple logistic regression test.

Table 2.3 Multiple Logistics Regression Test Results on baby growth

Variable	B	p-value	Exp (B)
Age	.916	.001	2.499
Education	1.196	.001	3.308
Parity	1.233	.019	3.430
Nutrition	1.293	.020	3.643
Constant	-10.886	.000	.000

From table 2.3 above, the logistic regression test results explain that the independent variables of age, education, parity, and nutrition (exclusive breastfeeding) affect infant growth and development. Based on the most significant output, the most crucial variable is nutrition, where infant growth and development are 3,643 times greater.

LIMITATION OF THE STUDY

This study only uses the perspective of several theories, explaining the relationship of several theories between variables, but in fact there are many other tehories that provide different views on the topic under study with provide different views on the topic under study with various other related variables. This research is cross sectional, that is, it is only studied in a limited time and only to prove the conditions that occurred at the time of the study and changes that may have occurred or will occur cannot be observed.

CONCLUSION AND SUGGESTION

Conclusion

Based on the results of research and discussion, the conclusions are there is an influence or effect of age on the growth and development of babies, there is an influence or effect of education on the growth and development of babies, there is an influence or effect of parity on the growth and development of babies, there is an influence or effect of nutrition on the growth and development of babies, the most dominant factor influencing the baby's growth and development is nutrition.

Suggestion

For the Surabaya Vocational Health School under the Health Ministry, this research activity is helpful to introduce the institution to the public. This research provides information for the Health center community by utilizing the Primaku application to assess infant growth and development. So, it is necessary to carry out socialization activities to the community related to the importance of early detection of child growth and development. Therefore, they are expected to overcome infant growth disorders in their work area. Mothers who have babies are expected to provide nutrition (exclusive breastfeeding), Immunoglobulins, which function for the baby's immune can only be found in breast milk (ASI). Exclusive breastfeeding provides many benefits for babies. The benefits include the composition of breast milk suitable to the baby's needs, calories from breast milk meet the needs of babies until the age of six months. Furthermore, it can cause faster psychomotor development, supports cognitive development, supports vision development, strengthen the bond between mother and child, and is the foundation for confident personality development. This research uses the ***Primaku*** app to monitor their own baby's growth and development.

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