Growth and Development Education on Parents' Understanding Level of Gross Motor Development in Children Aged 0-6 Months

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Abstract

The growth and development of children aged 0-6 months is an important stage to achieve optimal quality of life. Parents have an important role in stimulating child growth and development early on in child growth and development. Problems that occur in children of this age, one of which is gross motor development due to parents' lack of understanding of child development. Education in the form of health literacy discusses growth and development and how to stimulate according to age so that parents can apply what has been taught. The aim is to determine changes in the level of understanding of parents when given growth and development education about gross motor development of children aged 0-6 months. This study used a quantitative research design with a type of *quay experimental* research, a *one-group pre-test-post-test* approach. The number of samples was 44 respondents with the *purposive sampling* method. The variables of this study are independent, namely parents' understanding of child growth and development measured by questionnaires, and dependent variables, namely gross motor development of children aged 0-6 months measured by ASQ (Ages and stages questionnaire). Data analysis techniques used were univariate test, normality test, and effect test. The effect test using Wilcoxon showed the sig result (2-tailed) was 0.000 <0.05, meaning there is a significant effect. It can be concluded that there is an effect of growth and development education on parents' level of understanding about the gross motor development of children aged 0-6 months.

Keywords: Understanding, Parents, Growth and Development, Gross Motor, Education

1. INTRODUCTION

In Islam's view, children are a mandate from Allah Subhanahu Wa Ta'ala, which, as parents, must educate their children to become pious, knowledgeable, and devoted people. Allah says in the holy verse of the Qur'an in the letter At-Tahrim verse 6 which means:

"O you who believe, protect yourselves and your families from the fire of hell whose fuel is man and stone; its guardians are harsh angels, who are hard, who do not disobey Allah in what He commands them and always do what is commanded." (Noor, 2020).

Determining the future of a nation can be seen from the success of healthy human resources. I am building the health of human resources by making efforts to monitor the growth and development of children early in the womb. Child development must get a good stimulus with the aim of improving the quality of life of children in order to achieve optimal growth and development. (Segita & Noflidaputri, 2022).

Growth is the increase in body weight and height, while development is motor and sensory abilities. (Indria Ayu, 2022). Motor development is an element of maturity *(maturity)* and control of body movements, which will continue to develop during age gradually and continuously. (Fitriani & Adawiyah, 2018). Motor development is divided into two aspects, namely gross and fine motor.

In infancy, the stages of rapid growth and development from birth to 1 year of age are critical because babies receive stimulus using their motor activities and senses. However, motor development that occurs at 4-6 months occurs more quickly (Murtiningsih et al., 2019). Children at the age of 3 months can primarily lift their heads and sit for six months. (Naufal, 2019). Gross motor is a physical activity that requires coordination and children's ability to perform various movements that predominantly use large muscles in the body or all limbs and are influenced by self-maturity (Arifiyanti et al., 2019). (Arifiyanti *et al.*, 2019)..

According to survey results by the Indonesian Pediatric Association (IDAI), the prevalence of Indonesian children with developmental delays is around 5-10%. (Zukhra, 2019). According to the *World Health Organization* (2014), approximately 1-3% of children under five experience motor, socio-emotional, language, and cognitive development delays. (Kumalasari & Wati, 2019).. The research found by Kurniawati & Hanifah (2015) stated that the mother's knowledge about stimulation was still lacking as much as 13.3%.

The care and understanding of mothers and fathers as the first education must be aligned to increase the stimulation of children's growth and development. Good parents

have a sense of responsibility to educate and guide children and be able to shape good character and behavior (Ihsan) so that they become provisions for life in society. (Kurniati *et al.*, 2019).

Physiotherapy has a preventive and promotive role, namely education in the form of health literacy and early detection of children in the form of *screening* to determine whether the child has special needs or *delays* so that parents can understand the child's motor development according to their age. (Syahailatua & Kartini, 2020).

Parents need to know more about child development by introducing health literacy about the stages of growth and development, especially gross motor development, and how to stimulate children according to their age. According to the *World Health Organization* (2010), health literacy aims to optimize health well-being and minimize the risk of health disparities. (Apriliani & Utami, 2021).

The results of the preliminary study found that parents who have children aged 0-6 months at the Posyandu Balita Desa Makam Haji are entirely a lot of problems where parents still pay less attention to their children to come to the posyandu and understanding of child growth and development, especially gross motor development in accordance with the age of the child does not fully understand.

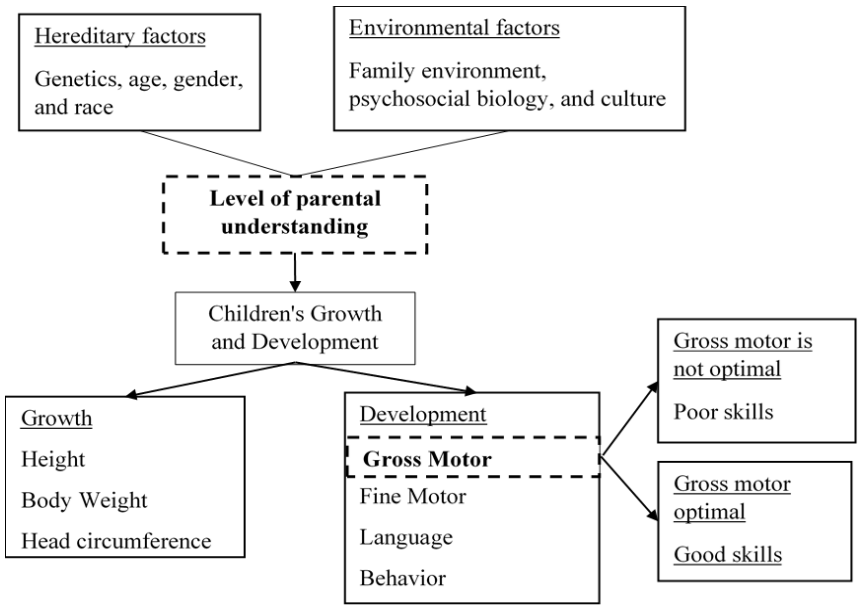


Figure 1. *Underlying Process*

From the above statement, researchers are interested in examining the effect of growth and development education on parents' level of understanding of gross motor development of children aged 0-6 months (Fatmarizka et al., 2021). This research was carried out to develop knowledge, a source of information, so that parents are more concerned about child growth and development and can disseminate information to the wider community. The results of this study are expected to be used as input to optimize child development.

2. METHODS

2.1 Study Design

This study uses a quantitative research design with the type of experimental research, namely *quasi-experimental*; the approach used is *one group pre-test- post-test*.

2.2 Study Variables

The variables of this study consist of the independent variable, namely child development education, and the dependent variable, namely parents' understanding of gross motor development of children aged 0-6 months.

2.3 Sampling

The population in this study were all parents who had children aged 0-6 months at Posyandu Balita Menur, Makam Haji Village from Menur 1 to 10, totaling 55 parents, while the sample was 48 parents. However, the number of respondents having characteristics based on the inclusion-exclusion criteria and dropout amounted to 44 parents.

2.4 Sample Criteria

Sampling has been determined by researchers who have set inclusion, exclusion, and dropout criteria.

Table 2.1 Inclusion criteria, exclusion criteria, and *dropout* criteria

Inclusion Criteria	Exclusion Criteria	*Drop Out* Criteria
1) Respondents who the series in the study. 2) Respondents were willing to fill out *informed consent*. 3) Respondents were willing to complete the research	1) Respondents were excluded from the sample, such as resignation, failure to attend research, 2) Children with physical limitations or *disabilities.*	Respondents did not follow the directions made by the researcher. The respondent did not attend the last evaluation.

2.5 Research Instruments

2.5.1 ASQ-3

The Ages and Stages questionnaire is a questionnaire that can be used as an accurate *screening* tool for general development in children aged 0-24 months that parents complete. Scoring is based on the parent's response, "yes" (10 points), "no" (0 points), or "sometimes" (5 points), to statements about the child's activities (Singh et al., 2017). (Singh *et al.*, 2017). *Test-retest* reliability was 92%, sensitivity was 87.4%, and specificity was 95.7%. (Bowe et al., 2022)

2.5.2 Questionnaire

This questionnaire contains 10 statement items that discuss the growth and development of children aged 0-6 months. Score determination, if the answer is "yes" (1 point) and "no" (0 points). The test results obtained table value> 0.297, and *Cronbach's Alpha* has a value of 0.466> 0.06.

2.6 Data Analysis

Data analysis methods in the study used univariate analysis, normality, and influence. Univariate to describe the characteristics of each variable. Before conducting the effect test, a normality test was performed. The effect test using *Wilcoxon is* seen from the p-sig value. (2 *tailed*) If <0.05, there is an effect, but if> 0.05, then there is no effect.

2.7 Ethical Clearance

This study was approved by the ethics commission of Dr. Moewardi Hospital with number 1.521/ XI/HREC/2022.

3. RESULTS AND DISCUSSION

3.1 RESULTS

3.1.1 Test Analysis of Respondent Characteristics

Table 3.1 Frequency distribution of parent respondent characteristics

Characteristics	Frequency	Percentage (%)
Age		
20-25 Years	13	29,5 %
26-31 Years	18	40,9 %
32-37 Years	10	22,7 %
38-43 Years	1	2,3 %
44-49 Years	2	4,5 %
Total	44	100 %
Education		
SD	1	2,3 %
SMP	8	18,2 %
SMA/SMK	27	61,4 %
D3	1	2,3 %
S1	6	13,6 %
S2	1	2,3 %
Total	44	100 %
Jobs		
Housewife	34	77,3%
Labor	1	2,3%
Self-employed	1	2,3%
Merchant	1	2,3%
Private Employee	3	6,8%
Early Childhood Teacher	1	2,3%
Elementary School Teacher	1	2,3%
TPA Teacher	1	2,3%
Doctor	1	2,3%
Total	44	100%

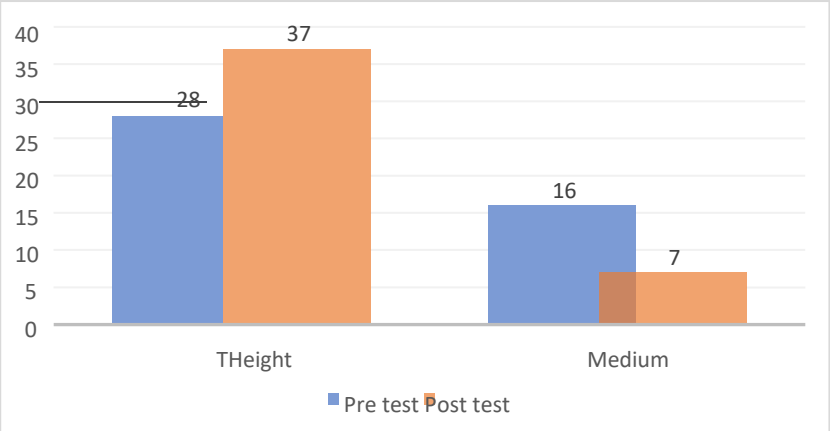
Based on the age of parents at the Posyandu Balita Makam Haji Village from menu 1 to 10 with an age range of 26-49 years, a total of 44 people, the most parents with ages 26-31 years were 18 people (40.9%), and the least parents with ages 38-43 years were one person (2.3%). Based on parents' education, most of them had a high school / vocational high school education, with 27 respondents (61.4)% and one respondent (2.3%) with an elementary school education. Based on parents' occupation, there were 34 respondents (77.3%) with housewife occupation and a small proportion of jobs such as laborers, entrepreneurs, traders, PAUD teachers, elementary school teachers, TPA teachers, and doctors, each respondent (2.3%)%.

Table 3.2 Frequency distribution of child respondent characteristics

Characteristics	Frequency	Percentage (%)
Age		
16-21 weeks	19	43,2 %
22-27 weeks	25	56,8%
Total	44	100%
Gender		
Male	21	47,7%
Female	23	52,3%
Total	44	100%
Child Nutrition Status		
Malnutrition	6	13,6%
Normal	30	68,2%
More Nutrition	4	9,1%
Overweight	4	9,1%
Total	44	100%

Based on the age of the child in children aged 0-6 months at the Posyandu Balita Makam Haji Village from menu 1 to 10, there are ages 16-21 weeks, a total of 19 children (43.2%) and 22-27 weeks, a total of 25 children (56.8%). Based on the gender of the children, there were 21 (47.7%) male and 23 (52.3%) female. While the nutritional status of children who have poor dietary quality is 6 (13.6%), normal is 30 (68.2%), *overweight* is 4 (9.1%) and *overweight* is 4 (9.1%).

Figure 2. Frequency distribution of *pre-test* and *post-test* results of parental understanding



Based on parents' understanding of child growth and development in children aged 0-6 months at the Posyandu Balita Makam Haji Village from menu 1 to 10 before being given education, there were 28 respondents (63.6%) with high understanding and 16 respondents (36.4%) with moderate experience. Whereas after being given education, there was an increase in 37 respondents (84.1%) with high understanding and seven respondents (15.9%) with moderate experience.

Table 3.3 Frequency Distribution of Gross Motor Development of Children at the Age of 0-6 Months

Development	Frequency	Percentage (%)
Before Education		
Good	23	52,3%
Less	12	27,3%
Bad	9	20,5%
Total	44	100%
After Education		
Good	34	77,3%
Less	8	18,2%
Bad	2	4,5%
Total	44	100%

Based on gross motor development in children aged 0-6 months at the Posyandu Balita Makam Haji Village from menu 1 to 10 before being given education on how to stimulate children, there were 23 children (52.3%) with good gross motor development,

less gross motor development there were 12 children (27.3)%. Of those experiencing poor gross motor development, nine children (20.5%) were there. Whereas after being given education on how to stimulate children, there is an increase in the number of 34 children (77.3%) with good gross motor development, less gross motor development there are eight children (18.2%) and those experiencing poor gross motor development there are two children (4.5%).

3.1.2 Normality Test Analysis

The normality test used in this study was the *Shapiro-Wilk* test because the samples taken were <50 people.

Table 3.4 *Shapiro Wilk* Normality Test Results

Variables	**ρ-value**	**α =0,05**	**Description**
Parents' understanding before education	0,001	0,05	Not Normal
Parents' understanding after education	< 0,001	0,05	Not Normal

Based on the calculation of the *Shapiro-Wilk* test, it is found that the p-value <0.05 in parental understanding before education has a value of 0.001, and after education has a value <0.001, so it is concluded that it is not normally distributed.

3.1.3 Influence Test Analysis

In this research, the influence test used is the *Wilcoxon* Test because, based on the normality test results, data is not normally distributed. A significance test is carried out to find out the results of the significant or insignificant effect test.

Table 3.5 *Wilcoxon* Test Results

Variables	**N**	**Sig (2 tailed)**	**Description**
The effect of growth and development education on parents' level of understanding of gross motor development of children aged 0-6 months	44	< 0,001	Ha accepted

Table 3.6 Significance Test Results

Variables	Sig	Description
The effect of growth and development education on parents' level of understanding of gross motor	< 0,001	Significant

The results of statistical tests showed the effect of growth and development education on the level of understanding of parents about the gross motor development of children aged 0-6 months at the Posyandu Balita Desa Makam Haji ($\leq \alpha = 0.005$) with significant.

3.2 DISCUSSION

Parents' understanding of gross motor development of children aged 0-6 months based on the results of the *Wilcoxon* test obtained the results of ρ-value = 0.000 < α = 0.05, so the H0 statistic is rejected, and Ha is accepted, so there is a This is to research conducted by Permata *et al.* (2019), there is an effect of increasing maternal understanding of child motor development by 20%. The provision of health promotion in the form of child growth and development education with health literacy is exceptionally influential on the understanding of parents where there is a difference in the results of the *pre-test* and *post-test* showing an increase in the knowledge of parents who have high expertise from 28 respondents (63.6%) to 37 respondents (84.1%).

In this study, parents at the Posyandu Balita Desa Makam Haji mostly have an average age with age range of 26-31 years, which is an age that is included in the early adulthood category where the capacity to capture information and mindset is still able to work well so that the information obtained can be applied to the development of their children. (Syahailatua & Kartini, 2020). In line with previous research by Riyadi & Sundari (2020), the age of respondents is 20-35 years, and this age is productive so that they can be responsible for actions or behaviors that can improve the quality of their health. Based on the study results, parents' understanding of growth and development and how to stimulate children is influenced by educational factors where most parents have a high school / vocational high school education, and some have a master's degree. Educational factors also determine the cause of a person's level of understanding in the

learning process. The higher the education, the easier it is for the person to receive knowledge and information to have broad insight. (Putra *et al*., 2018).

Then, regarding the type of work where you often interact with others, more new understanding will be gained compared to people without interaction with others. Based on the results of previous research by Meijon Fadul (2019), in most occupations, as much as 70% were homemakers. In line with this study, most trades were homemakers. Homemakers prefer to maximize all activities at home with children. Parents who do not work will focus more on caring for their babies at home by providing more intense stimulation. Meanwhile, busy working mothers do not have much time to pay attention to their baby's needs in delivering stimulation measures. (Wulandari, 2019).

According to the ASQ-3, there are three categories of child *screening* results. It is said to be a good category if the development is appropriate, a poor type needs additional learning and developmental monitoring, and a poor variety needs further follow-up with a professional. Based on the results of interviews using ASQ-3 obtained by parents of children who fall into the needy and poor categories at the age of 3-4 months in the prone phase while lifting the head can not fully then when carried, the baby's head can not hold it stably. At 5-6 months, those categorized as poor and poor in the sitting phase cannot support both hands. Some babies cannot do the crawling position and balance when keeping the body when helped to stand unstable. According to research conducted by Awanis (2015), gross motor development is not fully visible in the near future because this development continues in accordance with cognitive maturity and social relationships.

Parents' lack of understanding about child development, overprotection, and lack of motivation in children will lead to a lack of gross motor development. Mothers with good knowledge can affect their attitudes and behavior in stimulating child growth and development according to their age. Still, mothers with less experience will hinder child development. (Rumahorbo *et al*., 2020). Good parental education will make it easier for children to receive information on how to care for and provide stimulation actions for their children.

As for what affects the gross motor of infants, namely nutritional factors, health status, the level of intelligence of infants, behavior, attitudes, and a good environment where the surroundings are broad-minded and social-economic conditions will affect actions in stimulation care. (Susanti & Rahmawati Putri, 2020). Good nutrition or nutrition for infants aged 0-6 months is exclusively breast milk. Exclusive breastfeeding is related to the baby's motor development, which can be optimized optimally. However, unlike babies who are not exclusively breastfed, they can experience motor disorders because nutrients are not optimally fulfilled (Fiorentina et al., 2020). (Viorentina et al., 2022). A positive environment provides encouragement, stimulation, and opportunities for children to learn (Legiati *et al*., 2019).

4. CLOSING

4.1 CONCLUSIONS

From the results of the research that has been conducted, it can be concluded that there is an effect of growth and development education on parents' level of understanding about the gross motor development of children aged 0-6 months.

4.2 ADVICE

As a reference for further research to be more specific in explaining child growth and development and providing quality time in providing action (stimulation). More coordination with respondents so that education delivery can be adequately considered. It is hoped that respondents will be added because it will create enthusiasm and trust and the success of the research.

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