

THE EFFECT OF THE “RAYQAL” APPLICATION ON MOTHERS’ KNOWLEDGE, ATTITUDE, AND BEHAVIOR IN STIMULATING TODDLER DEVELOPMENT

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Abstract

Parents need effective media to enhance their knowledge, attitudes, and behaviors in supporting early childhood growth and development. One such tool is the "Rayqal" application, which is designed to help mothers stimulate optimal development in toddlers. This study aimed to analyze the effect of the "Rayqal" application on improving maternal knowledge, attitudes, and behaviors related to toddler development. A quasi-experimental design with a pretest-posttest control group was used. The population consisted of 80 mothers with children aged 0–59 months, selected using a total sampling technique. Data were analyzed using the Mann-Whitney test. Results showed significant differences in knowledge ($p=0.000$), attitudes ($p=0.000$), and behaviors ($p=0.000$) after the use of the "Rayqal" application. Specifically, in the intervention group, behavior scores increased from a pretest mean of 0.65 to a posttest mean of 1.18. These findings indicate that "Rayqal" significantly improved maternal abilities to support child development. In conclusion, the "Rayqal" application positively influences mothers' knowledge, attitudes, and behaviors in stimulating toddler growth. It is recommended that the use of "Rayqal" be expanded to support SDIDTK (Early Detection and Intervention for Child Growth and Development) programs at Gunungsitoli District Health Center to help prevent developmental delays in children.

Keywords: Attitude, behaviour, knowledge, “Rayqal” application, Toddler development

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1. Introduction

The child's ability to receive stimulation will be faster when interacting with the mother. Touch, hugs, and spending time together with the child are the primary means of providing stimulation. The mother's ability to provide stimulation is influenced by

factors such as age, education, personality, attitude, and the time the mother spends with the toddler. Current conditions show that there are more and more working women, so that mothers have less time to provide time to assess and stimulate the development of toddlers [1].

The rapid development of science and technology during the era of the Fourth Industrial Revolution has now transitioned into the era of Society 5.0, both of which significantly influence social life. Society now expects to coexist with technology and utilize it effectively [2]. The widespread use of gadgets also contributes to this trend. In this millennial era, individuals increasingly obtain information from digital media, which is easily accessible, making gadgets an effective medium for delivering knowledge and education [3].

Based on this, to address the problem of child development, researchers have created an application called the Ray Qalesya application ("Rayqal"), which contains a guide to providing comprehensive stimulation to toddlers aged 0 to 48 months, with a focus on the development of fine motor skills, gross motor skills, language and speech, as well as socialization and independence skills.

The "Rayqal" application has advantages when compared to other applications for toddler development stimulation because this application is equipped with text (narration), audio, and video in stimulating toddlers. Parents can not only read the explanation of each stimulation step but can hear and see in real terms every step of stimulation that is carried out. Parents/caregivers can clearly get information and make it easier for parents to carry out each stimulation step. Parents can track their child's development in every aspect of stimulation with this application's progress monitoring feature. This functionality helps parents understand their child's development well and which areas require more attention. This application is an important partner for parents and caregivers in ensuring that children experience healthy and optimal development from an early age [4,5].

The "Rayqal" application facilitates interaction between parents and toddlers, eliminating the need for an outdoor playground and reducing unnecessary expenses like purchasing

various toys for toddlers. Mothers only need to open their Android phones or PCs/laptops at home and can easily choose the developmental aspects they want to stimulate. Each stimulation display will have an assessment facility to see if the toddler can do it well [6].

2. Result and Discussion

Table 1. Pretest and Posttest Scores of Mothers' Knowledge in Stimulating Toddler Development in the Intervention Group and Control Group

Knowledge	Intervention Group		Control Group	
	N:	%	N:	%
	40		40	
<i>Pretest</i>				
Good	5	13	2	5
Enough	13	32	16	40
Not enough	22	55	22	55
<i>Posttest</i>				
Good	24	60	6	15
Enough	12	30	31	78
Not enough	4	10	3	7

The results of the study in Table 1 showed that pretest knowledge in the intervention group showed that half of the respondents had poor knowledge, as many as 22 people (55%), the same number as the pretest knowledge of the control group. The majority of the intervention group's posttest knowledge was good, as many as 24 people (60%), while the majority of the control group had sufficient knowledge, as many as 31 people (78%).

Table 2. Pretest and Posttest Scores of Mothers' Attitudes in the Intervention Group and Control Group in Stimulating Toddler Development

Mother's attitude	Intervention Group		Control Group	
	N:	%	N:	%
	40		40	
<i>Pretest</i>				
Positive	19	48	13	32
Negative	21	52	27	68
<i>Posttest</i>				
Positive	37	93	28	70
Negative	3	7	12	30

The results of the study in Table 2 showed that the attitudes of mothers in the pretest intervention group were almost the same, mothers had negative and positive attitudes (52% versus 48%), while the attitudes of mothers in the pretest control group were mostly negative (68% versus 32%). The attitudes of mothers in the posttest intervention group were mostly positive at 93%, and the attitudes of mothers in the posttest control group were mostly positive at 70%.

Table 3. Pretest and Posttest Scores of Mothers' Behavior in the Intervention Group and Control Group in Stimulating Toddler Development

Mother's attitude	Intervention Group		Control Group	
	N:40	%	N:40	%
Pretest				
Good	2	5	0	0
Enough	18	45	26	65
Less	20	50	14	35
Posttest				
Good	12	30	11	27
Enough	28	70	25	63
Less	0	0	4	10

The results of the study in Table 3 showed that the pretest behavior of mothers in the intervention group was mostly sufficient and lacking behavior, almost the same (45% versus 50%), while the pretest behavior of mothers in the control group was mostly sufficient, as much as 65.0%. The posttest behavior of mothers in the intervention group was mostly sufficient, as much as 70.0%, while it was the same as the posttest behavior of mothers in the control group, as much as 63%.

Table 4. The Influence of the "Rayqal" Application on Mothers' Knowledge in Stimulating Toddler Development

Knowledge		Nilai P*
Pretest Mean	Posttest Mean	

Intervention	0,58	1,08	0,000
Control	0,50	1,02	0,001

Caption: *Man Whitney Test

Based on Table 4, the results of the use of the "Rayqal" application were obtained with a mean pretest value of 0.58; while the mean value of the KIA book was 0.50. The mean posttest value of the "Rayqal" application group was 1.08 and the mean value of the KIA book group was 1.02. The results of the intervention group's knowledge with $p = 0.000$ ($\alpha < 0.05$), as well as the control group with $p = 0.001$ ($\alpha < 0.05$) it can be concluded that there is an effect of providing the "Rayqal" application on increasing maternal knowledge in stimulating toddler development.

According to Notoatmodjo [7] Most human knowledge is obtained through education, other people's experiences, mass media, and the environment. According to Yuniastuti et al.,48 the five senses that transmit the most knowledge to the brain are the eyes (approximately 75% to 87%), while 13% to 25% of human knowledge is obtained and transmitted through the other five senses. Flipcharts are visual media that can provide stimulation through the eyes and hand displays that can stimulate the brain, so the information received can provide optimal results. Understanding is the result of knowledge obtained after people perform a sense on a particular object. Senses come from seeing, hearing, smelling, and touching [8,5].

The results of this study, respondents after being given the "Rayqal" application experienced an increase in knowledge. The "Rayqal" application is an innovative solution specifically designed to provide comprehensive stimulation to toddlers aged 0 to 59 months. The "Rayqal" application focuses on the development of fine motor skills, gross motor skills, language and speech, as well as socialization and independence skills. The "Rayqal" application provides a

collection of stimulation guide videos specifically designed to stimulate toddler motor development. Exercises start from tiny hand exercises to crawling or walking activities, children are invited to develop their muscle coordination and movement skills in a fun way. The "Rayqal" application is equipped with a progress monitoring feature that allows parents to track their child's development in every aspect of stimulation. This helps parents understand that their child has developed well and areas that need more attention.

In line with the opinion of Sunaeni et al [6]. Audiovisual media contributes greatly to the information and persuasion aspects in behavioral change, this is due to the stimulus of the sense of hearing and the sense of sight of approximately 75-87% in transmitting information to the brain. Based on the theory of the cone of experience (learning pyramid) from Edgar Dale on audiovisual media, it also states that as much as 50% of a person learns from what he sees and hears.

Table 5. The Influence of the "Rayqal" Application on Mothers' Attitudes in Stimulating Toddler Development

	Attitude		Nilai P*
	Pretest	Posttest	
	Mean	Mean	
Intervention	0,58	0,93	0,000
Control	0,50	0,72	0,044

Caption: Man Whitney Test

Based on Table 5, the results of the use of the "Rayqal" application were obtained with a mean pretest value of 0.58 while the p value of the KIA book was 0.50. The mean posttest value of the group with the "Rayqal" application was 0.93 and the mean value of the KIA book group was 0.72. The results of the mother's attitude with $p = 0.000$ ($\alpha < 0.05$), as well as the control group with $p = 0.044$ ($\alpha < 0.05$) it can be concluded that there is an effect of providing the "Rayqal" application on improving the

mother's attitude in stimulating toddler development.

This is in line with the opinion that states that changes in attitude are basically influenced by factors of knowledge and belief or trust obtained from the results of sensing, one of which is obtained through education or the learning process [10]. Attitude is a source of predisposition in behaving and applying. The causal factors that trigger behavior in a person are a person's knowledge and attitude towards what has been done, the transformation of a person's knowledge and attitude from the obedience stage, implementing understanding and then becoming internalization or deep mastery [7,11]. Attitude is an assessment and it can be a person's opinion of a stimulus or object. Attitude is formed through the willingness to accept someone's words, respond to messages with active participation, and provide an assessment of readiness to act. Attitude refers to a point of view, perspective, reaction, or way of thinking that is steady about aspects of child care or development. Attitude does not stand alone, but has a relationship with certain objects such as knowledge, attitude has aspects of motivation, feelings, and natural characteristics in distinguishing between attitudes and skills or knowledge that a person has¹⁶ so that increasing a person's knowledge does not directly change attitudes because there may be other factors that influence it.

In line with the research results of Purwanti et al [12]., that there is a relationship between knowledge, attitudes, and behavior of mothers about stimulation with gross motor development of children aged 3-5 years in Puau Teluk Nibung Village, Pula Banyak District, Aceh Singkil Regency. In his explanation, the role of a mother in child care, also in providing stimulation to children is very large. The interaction between children and parents, especially the role of the mother, is very beneficial for the overall child development process because parents can immediately

recognize abnormalities in their child's development process and as early as possible to provide stimulation for the child's growth and development as a whole. Therefore, the right knowledge and attitude are needed by mothers about providing stimulation so that the child's gross motor development can be optimal.

Table 6. The Effect of the "Rayqal" Application on Mothers' Behavior in Stimulating Toddler Development

	Attitude		Nilai <i>P</i> *
	Pretest	Posttest	
	Mean	Mean	
Intervention	0,65	1,18	0,000
Control	0,55	1,03	0,021

Caption: Man Whitney Test

Based on Table 6, the results of the use of the "Rayqal" application were obtained with a mean pretest value of 0.65 while the mean value of the KIA book was 0.55. The mean posttest value of the group with the Rayqal application was 1.18 and the mean value of the KIA book group was 1.03. The results of behavior with $p = 0.000$ ($\alpha < 0.05$), as well as behavior in the control group with $p = 0.021$ ($\alpha < 0.05$) it can be concluded that there is a difference before and after the provision of the "Rayqal" application and KIA Book on maternal behavior in stimulating toddler development.

Behavior is a certain regularity in terms of feelings (affection), behavior is a person's psychic reaction to their environment. Based on the limitations, reactions can be described in various forms which are essentially classified into 2 (two), namely passive forms (without real or concrete actions) and in active forms with real or (concrete) actions [13].

The results of this study, respondents after being given the "Rayqal" application, namely with sufficient behavior, respondents who are still in sufficient behavior are respondents with several factors, namely

the closest person factor, in the form of family and behavioral changes from the environment. Kwick in Notoatmodjo [7] argues that behavior is an action or deed of an organism that can be observed and even learned. Behavior as the operationalization and actualization of a person's or a group's attitude in or towards something (situation or condition) of the environment (society, nature, technology, or organization) [14].

In line with the research results of Purnomo et al [12] that there is an influence of parental behavior in stimulating children during pregnancy (perinatal). In the discussion, the nuclear family of the father and mother is very important and is prioritized in prenatal child care. Specifically, this shows that parents already understand how to stimulate their children. In line with the results of Haryanti's research [51] that the description of parental behavior in stimulation of children who experience developmental delays aged 0-6 years. In the discussion that stimulation of children can be done by parents, caregivers, family, or people around the child. The stimulation given can be verbal, auditory, visual, tactile, and others [15].

3. Conclusion

The "Rayqal" application has a positive influence on increasing mothers' knowledge about stimulating toddler development when compared to the KIA Book at the Gunungsitoli Health Care Center. Additionally, the "Rayqal" application positively impacts mothers' attitudes toward stimulating toddler development in comparison to the KIA Book at the same center. Furthermore, the "Rayqal" application also affects mothers' behavior in stimulating toddler development relative to the KIA Book at the Gunungsitoli Health Care Center.

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