

The Role of Mother Cares (MOCA) for Compliance Applications of Parents in Stimulating Growth and Development of Children Aged 24 to 36 Month in Working Area of Puskesmas Kabanjahe

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Abstract

Therefore, the basic skill needed by the children need to be stimulated by directed-teach in gross motor skills, fine motor skill, speech and language skills, and socialization and independence. Mother Care's application (MOCA) in 24to 36 month of postnatal age can be used as the supportive tool used by parent to help detecting growth and developmental impairment and also to stimulate children in that age. The standard procedure for the growth and developmental stimulation for the children in 24to36 month of postnatal age can be found in MOCA application of 24to36 month of postnatal age which is presented in an animated motion with the time reminder. This research used queasy experiment model with pre-posttest with control group design, to assess the role of Mother Cares application (MOCA) toward parents compliance in stimulating growth and development of children 24to 36 month of postnatal age. This research was conducted at the Primary health care Kabanjahe from June to July 2017 with the total sample of 45 parents who have smartphone kind of cellular phone. The result of this research showed that age, education, and occupation of parents does not show a true difference with p value more than 0,05. It is proven that MOCA application in stimulating growth and development of children 24to 36 month of postnatal age increase knowledge of parents in stimulating growth and development of children 24to36 month of postnatal age with p value is 0,000 and it is proven to increase parents skill in stimulating growth and development of children 24to 36 month of postnatal age with p value is 0,001. Parents compliance in stimulating childrens development includes gross motoric skill, fine motoric skills, speech, language, socialize skill and independence showed a certain difference with p value less more 0,001. Based on this research we can conclude that Mother Cares Application (MOCA) toward parent's compliance in stimulating growth and development of children 24to 36 month of postnatal age in working area of the primary health care Kabanjahe, 2017 showed an increase of compliance 1.9 times higher than the control group.

Keywords: Mother Cares Application, Compliance, stimulation of growth

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Introduction

More than a third of children in the world experience growth disorders and both physical and mental development and an estimated 5 to 10% of the child population has developmental delays.^{1,2} In developing countries there are children aged less than 5 years who have impaired growth and development, some risk factors include poverty, malnutrition, poor health, an uncomfortable environment, these factors will lead to cognitive, motoric, social and emotional developmental disorders.³

In Indonesia it is estimated that 16% of toddlers experience developmental disorders, namely fine and gross motor development, hearing loss and lack of intelligence. The highest prevalence of developmental disorders occurs in language disorders (13.8%), and is followed by impaired fine motor development (12.2%).⁹ By the age of 4 children have mastered the basics of language development, but 5% to 8% of children experience language delay or preschool disorders that will result in learning, socio-emotional or behavioral problems until they grow older. It is estimated that at 2 years of age 20% of children experience language disorders and 50% - 60% occur in children aged 4-5 years.^{4,5}

Malnutrition is also still quite high in Indonesia. Based on Riskesdas in 2013 the prevalence of malnutrition in Indonesia showed an increase from 17.9% in 2010 to 19.6% in 2013. The prevalence of malnutrition appears when the baby enters the age of 6 months to the age of 2 (two) years, where this condition very much influenced by child development that is not optimal.^{1,6}

In general there are 2 factors that influence the child's growth and development disorders, internal (internal) factors such as genetic and external (external) factors such as the environment. External problems can be overcome by providing good nutrition and providing stimulation as often as possible based on the stage of the child's age. Based on several studies concluded that stimulation given in the child's environment can affect the growth and development of children to be good.^{7,8}

Specifically in Indonesia efforts to stimulate child growth and development have been listed in the Minister of Health Regulation No. 66 of 2014 concerning Monitoring of Growth, Development and Developmental Disorders of Children.⁹ Where in this case stimulation is carried out by health workers, health cadres, parents and people closest to the child.

However, early stimulation and identification of children with family growth and development problems are often mistaken because they are influenced by the way in which the family (especially the mother or caregiver) stimulates and recognizes deviations and decides the outcome of the detection. Child development deviations can be done by the mother by comparing their peers from the same age, when they visit the clinic or pediatrician with basic knowledge about child development.⁶

Stimulation is an activity to stimulate the child's basic abilities so that they grow and develop optimally. Every child needs to get regular stimulation as early as possible and continuously at every opportunity. Stimulation can be given by the closest people like parents. According to the results of the study Lack of stimulation in the child will cause deviations in growth and persistence Parent knowledge is related to parental understanding in providing stimulation needed by children in the age stage of child development. Working parents usually benefit from increasing knowledge and understanding of child growth and

development including physical, cognitive, social and emotional development. Parents who get more knowledge will improve skills that are better at stimulating child development, so that mothers will obey in stimulating child development. Improving the skills of parenting to parents is an effective strategy to promote child growth and development.^{11,12}

Based on the results of the study, the applications contained in smartphones are very interesting because they are designed to help patients improve adherence through the provision of specific information and through a reminder system that will improve maternal knowledge and awareness.^{13, 14}

In this study, the procedures used to stimulate the growth of children aged 24-36 months found in MOCA aged 24-36 months were given in the form of interesting motion animation accompanied by a time reminder, and the storage of continuous child examination data based on the frequency of stimulation given both the stimulation of the ability to rough, smooth motion, speech and language and the ability to socialize and independence of children aged 24-36 months.

Results

Table 1. Characteristics of Subjects in Both Research Groups

Characteristic	Group		P Value*
	Intervensi (n=30)	Kontrol (n=30)	
1. Age (Year)			0,838
a. < 20	9 (30%)	11 (36,7%)	
b. 20-35	14 (46,7%)	12 (40 %)	
c. > 35	7 (23,3%)	17 (23,3%)	
2. Education			0,344
a. Junior Hight School	10 (33,3%)	10 (33,3%)	
b. Senior Hight School	17 (56,7%)	13 (43,3%)	
c. Bachelor	3 (10%)	7 (23,3)	
3. Work			0,589
a. Work	17 (56,7%)	19 (63,3%)	
b. Does not work	13 (43,3%)	11 (36,7%)	
4. Paritas			0,432
a. Primipara	11 (36,7%)	14 (46,7%)	
b. Multipara	19 (63,3%)	16 (53,3%)	

Information : *)chi-quadrat

The results of statistical tests obtained $p > 0.05$, it can be concluded that there is no difference in age, education, occupation and parity, in both groups so that it is statistically homogeneous and feasible to compare.

Table 2. Comparison of scores on knowledge and skills in groups
Intervention and control

Componen (scale 100)	Group		P Value *
	Intervensi (n=30)	Kontrol (n=30)	
Knowledge Score			
Pre-Test			0,352
Average (SD)	70,4	68,5	
Median	72	68	
Range	52-84	52-88	
Post-Test			0,000
Average (SD)	81,9	73,5	
Median	80	72,0	
Range	64-100	60-96	
Skill Score			
Pre-Test			0,140
Average (SD)	74,5	68,9	
Median	73,6	68,4	
Range	47,37-94,74	52,63-78,95	
Post-Test			0,001
Average (SD)	88,5	77,6	
Median	89,4	81,5	
Range	57,89-100	52,63-94,74	

Information : *) Mann-whitney

Based on Table 2 above, it can be seen that there are significant differences in increasing knowledge and skills between conventional groups between groups given by MOCA.

Table 3 Parental Compliance Conducting Growth Measures Posyandu

Group	Parental Compliance		Nilai P*
	obedience	not obey	
1. Intervensi	28(96,6%)	1 (3,4%)	0,102
2. Kontrol	23 (82,1%)	5 (17,9%)	

Information :*) Uji Exact Fisher's

Based on Table 3 above, there is no significant difference in visiting the posyandu, both conventional and group given MOCA ($p > 0.05$).

Table 4 Parental Compliance Performs Development Stimulation in Intervention Groups and Control Groups

Stimulation Items Made	Group		P Value*
	Intervensi	Kontrol	
Rough motoric			< 0,001
Mean	91,10	69,89	
Median	94	66	

Range	46-109	29-106	
Fine Motoric			< 0,000
Mean	139,97	110,89	
Median	149	96	
Range	59-180	74-162	
Speak and language			< 0,000
Mean	117,17	92,75	
Median	124	82,50	
Range	63-142	57-150	
Socializing & independence			< 0,001
Mean	96,90	74,21	
Median	104	66	
Range	44-120	50-116	

Information :*)Maan-whitney Test

Based on table 4it can be seen that there is a significant difference between parental compliance in stimulating the development of gross motor skills, fine motor skills, speech and language skills and socialization and independence with a P <0.05.

Table 5.Parental Compliance in Growing Stimulation Child Growth Aged 24-36 Months

Group	Parental compliance performs stimulation of growth and development of children aged 24-36 months		P Value *	<u>CI 95%</u> OR
	Obedient (n=30)	Not obey (n=30)		
1. Intervensi	24 (82,8%)	5 (17,2%)	0,002	1,9
2. Kontrol	12 (42,9%)	16 (57,1%)		3,05-1,22

Information :*) Chi kuadrat

Based on table 5, it is seen that the increase in compliance is 1.9 times more obedient to parents who are given MOCA compared to conventional groups in providing stimulation of child development.

Discussion

Many factors influence parental compliance in stimulating growth and development for children aged 24-36 months, including age, education, employment and parity. The results of the confounding variable analysis of the study did not show a significant difference with a value of P > 0.05. In this study based on the results of statistical tests can be seen in table 2 shows that the application of MOCA increases the knowledge and skills of mothers in

stimulating growth and development of children aged 24-36 months. MOCA was proven to increase parental knowledge and skills in providing stimulation of growth and development for children aged 24-36 months, before giving treatment did not show significant differences (baseline data did not show significant differences), after intervention in case groups MOCA applications were able to increase parental knowledge about growth growth stimulation of children aged 24-36 months with a P value $<0,000$ and a skill P <0.001 . This research is in line with research conducted by Love SM, et al., Who said that through smartphone applications mothers proved skilled in parenting. By involving parents in evidence-based online childcare, it will increase the growth and development of children.¹⁵

Parents' knowledge about child development has often been mentioned as a factor associated with child development. In other words, if the mother's knowledge is good, the more skilled the mother is in stimulating the child's growth and development. It has been proven that when mothers have higher knowledge, the better the skills of parents in raising children.⁷ Efforts to improve child growth and development have mushroomed throughout the world. If the mother's knowledge is lacking, then the mother's skills in stimulating the child's growth and development will decrease. Based on research, if knowledge is lacking, then skills will not arise. These 2 reasons make the mother not obedient in stimulating the growth of the first child because the mother is not skilled. Second, the consequences of lack of knowledge about child development, so that the growth and development of children should be missed. A good mother's knowledge will improve maternal compliance in stimulating child development.¹⁶ Good knowledge will affect mother's behavior. good mother's knowledge, mother's behavior will be good too.¹⁷ Parents' skills in providing stimulation to children will benefit parents in the growth and development of children when compared to nutritional interventions and the usual standard of care. Parents 'skills in providing good care stimulation given to parents is closely related to parents' knowledge about child care.¹⁸

From the results of the study (table 3), parental compliance in making growth measurements showed no significant difference, with a P value > 0.102 . According to the researchers' assumptions, the two groups obediently visited the posyandu because the cadres were very active at each posyandu activity until parents felt this was just a routine to become a habit in the community.

In this study MOCA also played a role in parental compliance in stimulating development on each stimulation item for children aged 24-36 months in gross motoric (P <0.001), fine motor skills (P <0.001), speech and language (P <0.001) and socializing and independence (P <0.001).

With the use of MOCA (table 5), parents are obedient in stimulating growth and development of children aged 24-36 months with a value of P <0.002 with RR 1.9 times more compliant than the control group.

Parents are obedient in stimulating growth and development of children aged 24-36 months because MOCA which is loaded in a smartphone application makes it easy for parents to take it anywhere and can be used anytime and anywhere. In addition, MOCA is also included in interesting and easy to understand features, and is equipped with a reminder¹⁹⁻²¹

Conclusion

There is a role for the Mother Cares Application (MOCA) 24-36 months on parental compliance in stimulating growth and development for children aged 24-36 months in the working area of the Puskesmas Kabanjahee with an increase of 1.9 times more adherence than the control group.

Referensi

1. Kementerian, B.P.D.P.K. Riset Kesehatan Dasar. Badan Penelitian Dan Pengembangan Kesehatan Kementerian Kesehatan RI. 2010.
2. Rydz D, Shevell MI, Majnemer A, Oskoui M. Developmental Screening. *J Child Neurol.* 2005 Jan;20(1):4-21.
3. Grantham S, Gregor MC, Cheung YB, Cueto S, Glewwe P, dkk. Developmental Potential in the First 5 Years for Children in Developing Countries. *Lancet* 2007; 369: 60–70.
4. Feti DK. Efektifitas SDIDTK Terhadap Peningkatan Angka Penemuan Dini Gangguan Tumbuh Kembang Pada Anak Usia Balita Di Posyandu Teluk Wilayah Puskesmas Purwokerto Selatan.
5. Jeong Ji Eun, Hyung Jik Lee, Jin Kyung Kim. Developmental Profiles of Preschool Children With Delay Language Development. *Original Article Korean J Pediatr* 2014;57(8):363-369.
6. Soetjningsih P A. Role of Mother's Perceptions on Their Child Development on Early Detection of Developmental Deviation. *Paediatrica Indonesiana* 2001; 41:264-267.
7. Bina, I.D.K.D.J. dan Masyarakat, K. Pedoman Pelaksanaan Stimulasi, Deteksi Dan Intervensi Dini Tumbuh Kembang Anak Ditingkat Pelayanan Kesehatan Dasar. 2005.
8. Powell, C., Baker-Henningham, H., Walker, S., Gernay, J. and Grantham-McGregor, S., 2004. Feasibility of integrating early stimulation into primary care for undernourished Jamaican children: cluster randomised controlled trial. *Bmj*, 329(7457), p.89.
9. Sari NN. Bimbingan Kader Posyandu Dengan Kepatuhan Kunjungan Ibu Balita Di Posyandu (Cadre's Guidance with Visit Compliance of Children's Mother in Posyandu). *Jurnal Ners LENTERA.* 2015;3(1):1-9.
10. Sulistyawati A. 2014. Deteksi Tumbuh Kembang Anak. Jakarta: Salemba Medika.
11. Stevens Jr, J.H., 1984. Child development knowledge and parenting skills. *Family relations*, pp.237-244).
12. Nahar B, Hossain MI, Hamadani JD, Ahmed T, Grantham-McGregor S, Persson LA. Effects of psychosocial stimulation on improving home environment and child-rearing practices: results from a community-based trial among severely malnourished children in Bangladesh. *BMC public health.* 2012 Aug 7;12(1):1.
13. Dayer L, Heldenbrand S, Anderson P, Gubbins PO, Martin BC. Smartphone medication adherence apps: potential benefits to patients and providers. *Journal of the American Pharmacists Association: JAPhA.* 2013 Mar;53(2):172.
14. Mushamiri I, Luo C, Iiams-Hauser C, Amor YB. Evaluation of the impact of a mobile health system on adherence to antenatal and postnatal care and prevention of mother-to-child transmission of HIV programs in Kenya. *BMC public health.* 2015 Feb 7;15(1):102.
15. Love SM, Sanders MR, Turner KM, Maurange M, Knott T, Prinz R, Metzler C, Ainsworth AT. Social media and gamification: Engaging vulnerable parents in an

- online evidence-based parenting program. *Child abuse & neglect*. 2016 Mar 31;53:95-107
16. Rothenberg PB, Varga PE. The relationship between age of mother and child health and development. *American journal of public health*. 1981 Aug;71(8):810-7.
 17. Benasich AA, Brooks-Gunn J. Maternal attitudes and knowledge of child-rearing: Associations with family and child outcomes. *Child development*. 1996 Jun 1;67(3):1186-205
 18. American Academy of Pediatrics. Parenting Skills and Emotional Availability: An RCT. *Pediatrics*. 2015 Apr 1:peds-2014.
 19. Boulos M N K, Wheeler S, Tavares C, Jones R. How Smartphones Are Changing The Face Of Mobile And Participatory Healthcare: An Overview, With Example From Ecaalyx. *BioMedical Engineering OnLine* 2011, 10:24.
 20. Klasnja P, Pratt W. Healthcare in the Pocket: Mapping the Space of Mobile-Phone Health Interventions. *Biomed Inform*. 2012 February ; 45(1): 184–198.
 21. Polzien KM, Jakicic JM, Tate DF, Otto AD. The Efficacy Of A Technology-Based System In A Short-Term Behavioral Weight Loss Intervention. *Obesity (Silver Spring)* 2007 Apr;15(4):825–30. doi: 10.1038/oby.2007.584. [[PubMed](#)] [[Cross Ref](#)].

