

Effectiveness of The Father Alert Android Application on Father's Knowledge and Support in Stunting Prevention in 2023

Marsia^{1*}, Erni Juniartati², Dwi Sulistyawati³

¹⁻³ Singkawang Nursing Department, Poltekkes Kemenkes Pontianak, Indonesia
Pontianak, Kalimantan Barat, Indonesia

*Corresponding:- Marsia

Abstract:- Short stature or what is better known as stunting is a fairly complex health problem in Indonesia. The presence of disturbances in cognitive development in toddlers is a trigger that causes stunting. An innovative solution to preventing stunting is to provide education regarding the importance of the role of fathers in knowing children's nutrition and providing children with the right food. The research was carried out to find out whether the Android application for Dad Standby was effective or not. It is known that this application is an application that provides educational information to fathers in an effort to prevent stunting in the work area around the North Singkawang Community Health Center. Research is conducted with target populations father who has a baby in the area around the North Singkawang Community Health Center. 32 is the number of samples determined by the researchers in the research carried out which was divided into two, namely 16 respondents each in the intervention group and the control group. The data analysis used is Wilcoxon test and Mann Withney test. Mann Withney test shows a p value of 0.000 (<0.05), there is a significant difference in the level of knowledge and support of fathers between the intervention group and the control group. Conclusion, the father alert android application is effective in increasing the level of knowledge and support of fathers in preventing stunting. It is hoped that this research can be used as an intervention to prevent stunting in children and toddlers.

Keywords:- *Father Alert Android Application; Knowledge Level; Father Support; Stunting.*

I. INTRODUCTION

Stunting or what is better known as short toddler terminology is a condition where toddlers are measured through an index of PB/U or TB/U whose value is at the minimum limit value, namely the Z-score for children in grades 2 elementary school to -3 elementary school (stunned or short).) and 3 SD (very short or very stunned). This phenomenon is a disease that can be said to be a nutritional deficiency which is quite worrying because there is not enough nutrition that is digested over a long period of time. Usually stunting can be detected when the fetus is formed and can be seen clearly when the child is two years old

(Ministry of Health of the Republic of Indonesia, 2016. Without catch-up growth or what is known as catch up growth in stunting that has occurred, it can be said to have an impact on death. from the process of motoric and mental growth. Catch up growth and growth faltering if they do not undergo a developmental process, then toddlers at a young age can potentially experience stunting if nutritional intake is not met (Kementerian Desa Pembangunan Daerah Tertinggal dan Transmigrasi, 2017; Kementerian Kesehatan Republik Indonesia, 2016).

According to data collected by the WHO agency, it is stated that in 2017 as many as 150.8 million children under five or 22.2% suffered from stunting. In 2005 the figure obtained was 29.3%, while the figure of 26.1% was the figure in 2010 and 23.2% was the figure in 2015, thus interpreting that there was a downward trend in cases (WHO, 2018). 36.4% is the stunting rate in Indonesia, which is why Indonesia is in third place in Southeast Asia, then 50.2% of cases are followed by Timor Leste and 38.4% of cases are followed by India. The number of cases related to stunting in Indonesia experiences a phenomenon of fluctuating or fluctuating. According to data collected through the Research process by Basic Health in 2018, in 2013 Indonesia reached a prevalence of 37.2%, which was a decrease compared to 2018 which reached 30.8% (RISKESDAS, 2018). Meanwhile, in 2013 the prevalence of stunting cases in West Kalimantan reached 38.6%, with this figure being classified into two, namely 16.1% short, while 22.5% were considered very short.

The presence of infection and the potential for death is a very fatal risk experienced in children and infancy caused by stunting due to a decrease in the process of cognitive development. On the other hand, this phenomenon also has relevance to children's achievements which could experience a decline in productivity in the future. Unbalanced nutritional intake and aspects of disease are two potential causes of stunting itself. Food accessibility, health infrastructure, proper sanitation and hygiene and parental care are factors that are relevant to stunting. However, if we look further into the causes of stunting at the household and individual level, namely the economic level, educational accessibility (Dinkes Provinsi Kalimantan barat, 2015).

Physical disturbances in children, mental and child status are the result of stunting. Other research states that declining children's grades at school, low educational levels and low economic levels are the result of child stunting. There are other potentials such as disrupted and poor children's health as a result of stunting. Non-Communicable Diseases or better known as NCDs, infectious diseases and obesity are diseases that are relevant to stunting so that children can easily experience these diseases. Degenerative diseases are the result of a child being overweight over a long period of time. The decline in cognitive competence, disruption of productivity and increased risk of various diseases are implications of the increasingly declining economic situation in Indonesia (Trihono et al., 2015).

The involvement of various parties is needed in dealing with stunting. The results of research in 2017 which was carried out by the National Team for the Acceleration of Poverty Reduction (TNP2K) stated that existing practices in family life that were not good could potentially cause stunting. With a parenting style like this, there needs to be a father's role that is not only the mother's role. Provision of nutrition monitored by parents is a crucial thing to do in the first 1000 days of a child's life (Ida, 2018).

The socialization that a father can carry out for his children can be said to be an aspect of the presence of the father's role which is not only physical but also psychological, such as being a good head of the household, maintaining harmonious relationships and so on so as to create a comfortable and calm atmosphere. A father's role can also ensure that his child gets adequate nutrition in his daily life. Apart from that, a father can also ensure that the surrounding environment is kept clean. Specifically, the actions taken are role models that need to be mirrored to children, such as washing hands regularly, ensuring that children are not exposed to cigarette smoke and so on. (Aulidina, 2017).

Nowadays, there is a role that justifies that the role of a father who only has the responsibility to support the family has a tendency that the father is not aware of the child's development. On the other hand, the role of the father who has the responsibility to provide food to a family, then the factor of the quantity of children and the gap between the births of children which are quite close can have the potential to provide adequate nutrition for children due to the difficulty in creating a harmonious and calm atmosphere in the family, then this also will affect the child's parenting style. The spacing of pregnancies tends to be close so that the child's nutrition is inadequate due to a lack of nutritional monitoring from parents, which can potentially lead to stunting (Rufaida, 2020). With support from closest relatives and a wife, the father's role can become stronger. Efforts such as creating a harmonious atmosphere, meeting nutritional needs including fat, protein, fiber, vitamins and so on, then maintaining the wife's condition during pregnancy is the father's role in anticipating the stunting phenomenon (Iswandari et al., 2020).

Using a condom when having intimate relations is a good decision taken by the father to anticipate the distance between pregnancies which tend to be close. However, nowadays, providing material is the only role of a father which is very biased which has the potential to cause weak monitoring of nutritional adequacy in children (Harahap et al., 2020). Even though various Maternal and Child Health (KIA) programs have been implemented, there are many challenges in efforts to improve maternal and child health, for example a shortage of professional health workers, lack of community participation, lack of timely detection of complications and delays in the referral system and lack of related monitoring. maternal and husband's health in dealing with obstetric complications. Therefore, there is a need for breakthroughs, for example modifying the Health program through Information Technology (IT). The growth of mobile phones, accompanied by the pressure to save lives and potentially reduce the potential for mothers and children to die, has encouraged the emergence of one form of use of technology mobile related to health services, which is called mHealth. mHealth is an instrument that is quite a solution and interesting in health interventions, WHO even recommends this technology in monitoring health.

Related tools m-Health become an innovative facility in providing information and dealing with various complex health problems by reducing costs when patients are being treated, and also increasing access to nursing. Of course m-Health cannot physically provide commodities, personnel and equipment, however m-Health can support health through referrals and outreach, support in decision making, monitoring or supervision, scheduling and tracking return visits, as well as health education and counseling. The health program carried out is equipment-based mobile which has the perspective of being an efficient and effective instrument in terms of costs and human resources involved (eg counseling, leaflets, brochures). Improving the quality of health and socio-cultural changes in society which become more concerned about health are the impact of the utility of information technology, especially smartphone.

According to the background explained above, the author has an interest in the topic discussed and conducted research with the title "Effectiveness of the alert father Android application on fathers' knowledge and support in preventing stunting in 2023 in the working area of the North Singkawang Community Health Center."

II. METHODS

➤ Design

The research method applied is a quantitative method which has a type of research quasi-experiment pre-test and post-test with control group. Researchers qualified the group which occurred into the intervention group which was given the Android application Dad Siaga, while the control group was only given the educational module.

➤ *Sample and Sampling Technique*

This research uses a target population father who has a baby in the area around the North Singkawang Community Health Center. 32 is the number of samples determined by the researchers in the research carried out which was divided into two, namely 16 respondents each in the intervention group and the control group. The sampling technique in this research applies techniques probability sampling type simple random where the method is used purposive sampling which is based on inclusion and exclusion criteria.

➤ *Instrument*

The father's level of knowledge was measured in this research by paying attention to a measuring scale which has a percentage of 76% - 100% in the good category as outlined in the questionnaire sheet, then a percentage of 56% - 75% in the sufficient category and a percentage of <56% in the poor category. Meanwhile, measuring the level of father's support using a questionnaire sheet with a measuring scale can be said to meet good indicators if the answer is >76-100, sufficient 56-75 and less <56. This research experiment was administered using a mobile application that can be used on Android via cell phone to provide alert father education. An observation sheet and a guide containing standard operating procedures (SOP) containing the procedures for using the alert father education application were also used in this research.

➤ *Intervention*

The orientation or approach used by this researcher was carried out on intervention and control group respondents by providing an explanation of the objectives, time contracts and actions which were then given informed consent to the respondent to be used as evidence that the respondent is willing to participate in the research procedures carried out from start to finish. Before the procedure was carried out, the researcher assessed the

husband's level of knowledge and support by asking respondents to fill out the questionnaire sheet provided (pre-test). Then, in the intervention group, researchers will provide comprehensive information notification via the standby father education Android application to respondents, while in the control group the standby father education module will be given manually. Researchers measured husband's support after education (post-test) in the intervention and control groups. The results of the pre and post-test questionnaire measurements were carried out by data analysis to determine the results of this research.

➤ *Data Analysis*

Observation, filling out questionnaires by respondents, and interviews are steps taken before researchers carry out the data analysis process. If the data has been collected, the researcher will process it with the help of the SPSS program followed by carrying out non-parametric analysis tests, which are better known as Wilcoxon test and Mann Witney test. Presenting tables and ending with conclusions is the next step if data analysis has been carried out in the discussion

➤ *Ethical Considerations*

In ethical considerations, the researcher must first arrange and obtain permission for the research that has been carried out from the LPPM Poltekkes Kemenkes Pontianak and carry out a feasibility test (ethical clearance) from the Health Research Ethics Commission (KEPK) Poltekkes Kemenkes Pontianak, then submitted a research permit to the North Singkawang Health Center, West Kalimantan to collect data. Data collection carried out by researchers certainly pays attention to ethical aspects, including: anonymity, confidentiality, and autonomy. Informed consent or what is better known as consent to involve respondents will be carried out by researchers before the research is carried out.

III. RESULT

Table 1. Frequency distribution of respondents in terms of age, income, education and employment based on demographic data

Category	Respondent Group				p value*
	Intervention		Control		
	N	%	N	%	
Husband's Age (mean±SD)	28.44±3.162		28.13±3.160		0.652
Min-max	23 – 33		22-33		
Income (mean±SD)	3.288±5.811		2.325±0.802		0.116
Min-max	1.5-2.5		1.5 – 3.5		
Education					
Elementary school	5	31.3	4	25.0	
Junior high school	4	25.0	1	6.3	0.592
Senior high school	5	31.3	7	43.8	
Bachelor	1	6.3	2	12.5	
Diploma 3	1	6.3	2	12.5	
Employment					
Government employees	1	6.3	4	25.0	0.487
Private	5	31.3	5	31.3	
Fisherman	1	6.3	2	12.5	
Farmer	4	25.0	2	12.5	
Construction laborers	1	6.3	2	12.5	

Self-employed	4	25.0	1	6.3	
---------------	---	------	---	-----	--

**Homogeneous Test*

Based on table 1 above age, income, education and employment in the intervention group and control group show the same significant values p value >0.05 means the same or homogeneous.

Table 2. Differences in fathers' knowledge levels before and after treatment in the intervention group and control group

Group	Knowledge level Before Treatment						Education level After Treatment						P*
	Good		Enough good		Less good		Good		Enough good		Less good		
	N	%	N	%	N	%	N	%	N	%	N	%	
Intervention	0	0	10	62.5	6	37.5	12	75	4	25	0		0.001
Control	0	0	10	62.5	6	37.5	0		14	87.5	2	12.5	0.046

**Wilcoxon test*

In the intervention group there was a significant difference in knowledge levels before and after treatment (p=0.001), while in the control group there was a significant difference in knowledge level before and after treatment (p=0.046).

Table 3. Analysis of differences in fathers' knowledge levels between the intervention group and control group

Group	Knowledge level						P value
	Good		Enough good		Less good		
	N	%	N	%	N	%	
Intervention	12	75	4	25	0		0.000
Control	0		14	87.5	2	12.5	

**Mann Whitney test*

Based on the table above, it shows that the level of knowledge after being given treatment in both groups shows a significant difference between groups, namely p value 0.000 (p<0.05).

Table 4. Differences in father's support before and after treatment in the intervention group and control group

Group	Support Before Treatment						Support After Treatment						P*
	Good		Enough Good		Less Good		Good		Enough Good		Less Good		
	N	%	N	%	N	%	N	%	N	%	N	%	
Intervention	7	43.8	9	56.3	0		16	100	0		0		0.000
Control	9	56.3	7	43.8	2	12.5	0		15	93.8	1	6.3	0.14

**Wilcoxon test*

In the intervention group, there was a significant difference in father's support between before and after treatment (p=0.000). In the control group there was no significant difference in support before and after treatment (p=0.14).

Table 5. Analysis of differences in father's support between the intervention group and the control group

Group	Father's support						P value
	Good		Enough Good		Less Good		
	N	%	N	%	N	%	
Intervention	12	75	4	25	0		0.000
Control	0		14	87.5	2	12.5	

**Mann Whitney test*

Based on the table above, it shows that father's support after being given treatment in both groups shows a significant difference between groups, namely p value 0.000 (p<0.05).

IV. DISCUSSION

The right step in improving the quality of health in society is through appropriate educational methods and media. The control group was given counseling using a stunting education module. Activities carried out include sharing and lectures. The lecture method can be defined as a way of conveying information using the oral method. Providing information in this way produces 20-40% of the respondent's grasping power, which can be concluded that this method can actually be more effective if other methods can be combined or combined. Meanwhile, the sharing method is a method used to provide time and space for respondents to provide feedback which can be in the form of comments, arguments and so on. In this way, fathers can discuss various things related to their experiences and explain what obstacles they face. Then, increasing insight regarding stunting can also come from reading materials in the form of educational modules.

It is known that there was an increase in insight in the intervention group compared to the control group. The trigger for the intervention group became superior by using information technology assistance in the form of smartphone namely the method used in the application is easier to understand, more interesting so it can influence a person's knowledge and support. This application model can be used with respondents with different educational backgrounds ranging from elementary school to university. Notoatmodjo said that the effectiveness of absorbing information through the sense of sight reaches 75% to 87%, which is relatively greater when compared to other senses which have figures of 13% to 25%. Expanding insight is obtained from reading activities (Musdalifah et al., 2020). The application created combines the senses of sight and hearing to obtain maximum results.

After carrying out activities in sensing, observing something is an implication of knowledge. Various aspects such as school, work, social culture are aspects that influence knowledge. With the average age range of respondents being 28 to 31 years, it can be interpreted that in this age range, thinking and reasoning abilities become more mature and systematic. Specifically, compared with other respondents such as elementary school children, it can be concluded that the easier it is for someone to receive comprehensive information is directly proportional to their age.

The standby father education application is an informative and informative instrument for fathers as a strategy for preventing stunting. By supporting the development and growth of the baby, adequate nutrition is needed for the baby. Therefore, fathers must understand how to provide adequate nutrition for their children.

The father's role cannot be separated from being involved other than his wife in preventing stunting. The responsibilities that a father can carry out are cleaning sanitation around the house, providing adequate nutritional needs, providing moral encouragement to his wife so it can be said that the father's position is very crucial in this matter. The output that will be obtained includes growing children's self-confidence, being happy and having a tough mentality to face future challenges (Susi, 2012).

One of the materials contained in the alert father Android application is about baby nutrition. Consuming foods that have high nutrition is an implication of existing knowledge about good nutrition as well. Insight into nutrition plays a significant role in the process of making everyday dishes. So, the father's role in this case can be to provide encouragement to the wife and educate the wife regarding nutrition (Rohayati & Aprina, 2021).

Providing food to children is concrete evidence of the existence of a father. The practice of providing food to their children is crucial, not only the role of a father in procuring food. The research carried out by Mallan et al (2013), interprets that there is a correlation that tends to be positive between the role of fathers who provide food to children and the role of fathers who practice providing food to children. The existence of this activity informs that there is a tendency for fathers to play a positive role when providing food directly to their children. It was comprehensively explained by Guerrero et al (2016), who expressed their opinion that choosing to eat outside the home and at home with the family is a behavior that encourages behavior that can change. However, in reality, only a few fathers play the role of preparing food and providing food directly to their children. To mitigate this phenomenon, health workers must pay more attention to educating fathers regarding their crucial role in providing food to their toddlers/children.

V. CONCLUSION

The research results show that most of the fathers' knowledge levels in the intervention group were categorized as good and quite good, while the control group was categorized as quite good and not so good. Then, father's support in the intervention group was all categorized as good, while in the control group it was categorized as quite good and not so good. Mann Withney test shows a p value of 0.000 (<0.05), there is a significant difference in the level of knowledge and support of fathers between the intervention group and the control group. In conclusion, the father alert Android application is effective in increasing the level of knowledge and support of fathers in preventing stunting. It is hoped that this research can be used as an intervention to prevent stunting in children and toddlers.

REFERENCES

- [1]. Aulidina Dwi Mustafyani, Trias Mahmudiono (2017) hubungan pengetahuan, sikap, dukungan suami, control perilaku dan niat ibu dengan perilaku kadarzi ibu balita kurang gizi.
- [2]. Dinkes Kalbar. (2015). *Profil Dinas Kesehatan Provinsi Kalimantan Barat*.
- [3]. Harahap, E. S., Karjoso, T. K., & Sugianti, R. (2019). Analisis Faktor Ibu dengan Kejadian Memiliki Anak Balita Stunting di Kota Pekanbaru. *Jurnal Medika Usada*, 3(1), 27-51. <https://doi.org/10.54107/medikausada.v3i1.57>.
- [4]. Ida Widianingsih, Budhi Gunawan, Binahayati Rusyidi (2018). Peningkatan Kepedulian Stakeholder Pembangunan Dalam Mencegah Stunting di desa cangkung wetan kecamatan dayeuhkolot kabupaten bandung.
- [5]. Iswandari, D. P., Hariastuti, I., Anggriana, T. M., & Wardani, S. Y. (2020). Biblio-Journaling sebagai Optimalisasi Peran Ayah pada 1000 Hari Pertama Kehidupan (1000 HPK). *Counselia Jurnal Bimbingan dan Konseling*, 10(1), 14-27. <http://ejournal.unipma.ac.id/index.php/JBK/article/view/4988/2673>.
- [6]. Kemenkes RI. (2016). *Profil Kesehatan Indonesia Tahun 2016*.
- [7]. Kementerian Kesehatan RI. Laporan Nasional Riskesdas 2018. *Lap Nas RIskesdas 2018*. 2018;
- [8]. Rohayati & Aprina. *Pengetahuan Gizi Ibu Hamil*. Jakarta: Egc; 2021.
- [9]. Rufaida, F. D., Raharjo, A. M., & Handoko, A. (2020). The Correlation of Family and Household Factors on the Incidence of Stunting on Toddlers in Three Villages Sumberbaru Health Center Work Area of Jember. *Journal of Agromedicine and Medical Sciences (AMS)*, 6(1), 1-6. <https://doi.org/10.19184/ams.v6i1.9541>
- [10]. Susi, Ernawati (2012). *Gambaran Dukungan Suami Pada Ibu Menjelang Proses Persalinan di Wilayah Kerja Puskesmas Doro 2 Kabupaten Pekalongan. Sekolah Tinggi Ilmu Kesehatan Muhammadiyah Pekajangana Pekalongan*.
- [11]. Trihono., Trihono and Atmarita., Atmarita and Tjandrarini., Dwi Hapsari and Irawati., Anies and Nurlinawati., Iin and Utami., Nur Handayani and Tejayanti., & Teti . (2015). Pendek (Stunting) di Indonesia, Masalah dan Solusi. In Lembaga Penerbit Balitbangkes.
- [12]. World Health Organization. *Levels and trend child nutrition key findings of the 2018 edition of the joint child malnutrition estimates*. Geneva: World Health Organization; 2018.