JOURNAL MIDWIFERY (JM)
Jurnal Jurusan Kebidanan, Poltekkes Kemenkes Gorontalo
P-ISSN (2407-8506), E-ISSN (2808-523X)
http://jurnal.poltekkesgorontalo.ac.id/index.php/JM/index
DOI: http://dx.doi.org/10.52365/jm.v2i1.694

Stunting-Free Children Application to Improve Kindergarten Teachers' Knowledge and Attitudes About Stunting

Dianna[1], Dini Fitri Damayanti[2]
[1,2] Program Studi Sarjana Terapan dan Pendidikan Profesi Bidan Poltekkes Kemenkes Pontianak, Indonesia.
Email: dianaismail78@gmail.com[1], dinifitrid@gmail.com[2]

ABSTRACT

The implementation of stunting detection can be done by providing health education information through information technology in the form of smartphones using an android-based application, namely the Stunting-Free Children (SFC) Application containing information about stunting and guidelines in detecting growth in children. The aim is to analyze the effect of SFC application on kindergarten teachers' knowledge and attitudes about stunting. This study used pseudo-experiments, with a form of pre-posttest with a control design. The sample of the study was 80 kindergarten teachers in Luewigoong District. Divided into 2 groups (intervention group using SFC application and control group using leaflet media). Sampling based on probability sampling techniques by simple random sampling. Statistical testing using the Chi Square and the average difference tests of two unpaired groups (Wilxocon test). The results showed that the effect of the application of SFC application on increasing knowledge by 22.7 (p < 0.05) with RR 1.5 (CI 95%) means that the SFC application can increase kindergarten teachers' knowledge about stunting. There was no effect of the application of SFC application on improving kindergarten teachers' attitudes about stunting (p>0.05). Recommendations for routine use of the SFC application by teachers in order to detect stunting events early.

Keywords: Application for Stunting-Free Children, Attitudes, Knowledge, Stunting

ABSTRAK

Pelaksanaan deteksi stunting dapat dilakukan dengan pemberian informasi pendidikan kesehatan melalui teknologi informasi berupa smartphone dengan menggunakan aplikasi berbasis android yaitu Aplikasi Anak Bebas Stunting (ABS) berisikan informasi tentang stunting dan panduan dalam melakukan deteksi pertumbuhan pada anak. Tujuan untuk menganalisis pengaruh aplikasi ABS terhadap pengetahuan dan sikap guru TK tentang stunting. Penelitian ini menggunakan eksperimen semu, dengan bentuk pre-posttestt with control design. Sampel penelitian adalah guru TK di Wilayah Kecamatan Luewigoong sebanyak 80 orang. Terbagi menjadi 2 kelompok (kelompok intervensi menggunakan aplikasi ABS dan kelompok kontrol menggunakan media leaflet). Pengambilan sampel berdasarkan teknik probability sampling secara simple random sampling. Pengujian statistik menggunakan uji Chi Square dan uji beda rata-rata dua kelompok tidak berpasangan (Wilxocon test). Hasil penelitian menunjukkan adanya pengaruh penerapan aplikasi ABS terhadap peningkatan pengetahuan sebesar 22,7 (p<0,05) dengan RR 1,5 (IK 95%) artinya aplikasi ABS dapat meningkatkan pengetahuan guru TK tentang stunting. Tidak terdapat pengaruh penerapan aplikasi ABS terhadap peningkatan sikap guru TK tentang stunting (p>0,05). Rekomendasi pemanfaatan rutin aplikasi ABS oleh para guru agar dapat mendeteksi dini kejadian stunting.

Keywords: Aplikasi Anak Bebas Stunting, Pengetahuan, Sikap, Stunting

*Dianna, Program Studi Sarjana Terapan dan Pendidikan Profesi Bidan Poltekkes Kemenkes Pontianak, Jl. 28 Oktober Siantan Hulu Pontianak. dianaismail78@gmail.com

INTRODUCTION

In 2013 growth and development disorders in children in Indonesia reached 35.7% and were classified as high public health problems because they were still above 30%. Efforts to foster child growth and development are directed to improve children's physical, mental and psychosocial health through Stimulation, Detection and Early Intervention of Growth and Development Deviations (SDIDTK). These efforts are carried out as early as possible in the womb, with special attention to children under five years old and preschoolers, because this period is a period that is very sensitive to the environment and lasts very short and cannot be repeated, so that this period is referred to as the golden period, window of opportunity, and critical period (Kemenkes RI, 2018; Windayani et al., 2021).

Stunting is a condition of failure to thrive in children under five due to chronic malnutrition so that children are too short for their age marked by a z-score of Height according to Age (TB/U) <-2 Standard Deviation (SD) based on World Health Organization (WHO) standards (WHO, 2021). Several studies have found a link between height growth and developmental changes in the first 3 years and in older children. Stunting can also cause inhibition of motor system development, both in normal children and with certain diseases. Decreased motor function of stunted children without congenital abnormalities is associated with low mechanical ability of the triceps muscle due to slow maturity of muscle function (Davidson et al., 2020; Fitriani et al., 2022).

Stunting in children can lead to poor cognitive, motor, and social-emotional development. Stunting has a negative impact on children's academic achievement, children with stunting tend to have low learning achievement compared to children who are not stunted (Friscila et al., 2023)

Based on Riskesdas, the stunting prevalence rate in toddlers based on the age of 0-59 months in West Java presentation of 8.4% is very short, 20.8% is short. The intelligence level of children in Indonesia is ranked 64th out of 65 countries (Riskesdas, 2018). In 2017, Garut Regency ranked first out of 27 districts in West Java that had short toddlers at 43.2% and crossed the stunting problem threshold of < 20% (Kemenkes RI, 2018).

The incidence of stunting is closely related to SDIDTK activities in children. SDIDTK is a comprehensive and quality development of children through stimulation, detection and early intervention of developmental deviations in the first 5 years of life. As a solution,

child growth and development development is integrated with kindergarten education facilities which are now pre-school children before moving on to elementary school education (Fredy Akbar et al., 2021; Friscila, Wijaksono, et al., 2022; Mauyah et al., 2022).

Kindergarten education occupies a strategic role in the span of human life. This is based on the consideration that kindergarten education is the first experience for children to socialize, express and imagine. Kindergarten teachers are required to actively participate in providing education and have the responsibility to master pedagogic, professional, social and personality competencies. To improve the knowledge and attitudes of kindergarten teachers in stimulation, detection and early intervention of preschool children's growth and development is not enough only through counseling alone but it is necessary to train and assist in a planned, structured manner and the provision of tools or facilities for SDIDTK (Fredy Akbar et al., 2021; Lestari et al., 2022).

Many health applications on smartphones have been developed and widely used in the field of health. Smartphones can be used to be able to help service activities such as health education, providing information and storing health data Android is one of the best smartphone operating systems and most widely used as an educational medium. The Stunting-Free Children (SFC) application is an android-based application/software that functions to guide kindergarten teachers to be able to detect growth disorders that can be done by kindergarten teachers in their students.

The occurrence of stunting must be anticipated by all sectors, including kindergarten teachers, where the students educated are the category of children in the period of rapid growth and development. Routine teacher meetings with students provide great opportunities for kindergarten teachers to be able to carry out a very important role in detecting student growth disorders by utilizing today's technology, namely the Stunting-Free Children Application.

Based on these things, the research team is very interested in conducting a study that aims to analyze the effect of using the Stunting-Free Children application on increasing the knowledge and attitudes of kindergarten teachers about stunting in Leuwigoong District, Garut Regency. This research is useful to obtain the results of using the Stunting-Free Children application to detect early stunting events in students in kindergarten.

METHOD

This study aims to analyze the effect of the Stunting-Free Children (SFC)

application on increasing the knowledge and attitudes of kindergarten teachers about stunting. This research is a quasi-experimental research, with a pre-posttest method with control design. The sample used was 80 kindergarten teachers who were willing to be respondents and have smartphones. Divided into 2 groups, namely the intervention group using the ABS application and the control group using leaflet media determined using the proportion formula.

The sampling technique is carried out in total sampling. Sample separation was carried out using absences, where odd numbers were the intervention group and even numbers were the control group.

The research instrument used a questionnaire that had been tested for validity using the Pearson correlation technique and its reality using the Cronbach Alpha test. Data collection was carried out twice, first when the teacher was given a pre-test sheet then given an SFC application intervention, second when the teacher was given a post-test sheet. Data analysis using unpaired t-test, chi square test and wilxocon. Decision making if the p value < 0.05 then there is a difference between variables.

RESULTS AND *DISCUSSIONS*

Result

The results of the study are described in the following table:

Table 1. Characteristics of Research Subjects

Characteristics	Group		P value
	Intervention (n= 40)	Control (n= 40)	
1. Age			0,275*
Avg (SD)	31,4(5,87)	32,7(5,58)	
Range	23-47	24-44	
2. Education			0,431**
High School/Equivalent	8 ((20%)	11 (27,5%)	
Higher Education	32 (80%)	29 (72,5%)	
3. Length of work			0,799**
< 5 years	11 (27,5%)	10 (25%)	
≥ 5 years	29 (72,5%)	30 (75%)	

Description :*) t unpaired **)chi squared test

The characteristics of the study subjects based on age for the intervention group had an average age of 31 years with an age range of 23 – 47 years while in the control group the average age was 32 years with an age range of 24 – 44 years; for the most education with the last university education both in the intervention group as much as 80% and in the control group as much as 72.5%; For the most length of work ≥ 5 years both in the intervention group by 72.5% and in the control group by 75%. The results of testing the characteristics of research subjects using unpaired t tests and chi-squared tests can be concluded that the comparison of age, education and length of work in the research group statistically there is no significant difference (p > 0.05), so that

the homogeneity of characteristics in this study is worthy of comparison.

Table 2 Comparison of Knowledge Scores on Stunting in Both Research Group

Knowledge	Group		P value
	Intervention (n=40)	Control (n=40)	
1. Pre Data:			0,411
Average (SD)	63,6(10,8)	61,1(10,2)	
Range	45,5-90,9	36,4-81,8	
2. Data Post:			<0,001
Average (SD)	88,1(8,5)	76,1(10,8)	
Range	72,7-100	54,5-90,9	
Ratio Pre and post	p< 0,001*	p< 0,001*	
Knowledge rise			0,007
Median (range)	22,7(9,1-45,5)	18,3(-18,2-36,4)	

Description:*) Wilcoxon test

The results of the comparison of knowledge scores about stunting in the two research groups showed that before the intervention was given, the average knowledge of the two groups did not show a significant difference, it could be seen with a p value of >0.05. Statistically there is a significant difference in increasing knowledge in the intervention group and control group, this can be seen in the Mann-Whitney test with a value of p < 0.05 so that it can be concluded that the SFC application can increase kindergarten teachers' knowledge about stunting by 1.5 times compared to the control group.

Table 3 Comparison of Attitude Scores About Stunting in Both Research Group

Attitude	Group		P value
	Intervention (n=40)	Control (n=40)	
1. Pre Data:			0,763
Average (SD)	66,4(8,5)	65,8(8,4)	
Range	51,28-89,7	48,7-84,6	
2. Data Post:			0,103
Average (SD)	83,8(7,2)	80,9(8,3)	
Range	69,2-97,4	66,6-97,4	
Ratio Pre and post	p< 0,001**	p< 0,001**	
Knowledge rise			0,340
Median (range)	17,3(10,8)	15,0(10,7)	

Description :*) t unpaired **)chi squared test

The results of the comparison of attitude scores about stunting in the two research groups showed that statistically there was no significant difference in attitude improvement in the intervention and control groups, this can be seen in the paired t-test results with a p>0.05 value.

Discussion

Characteristics of the Research Subject

The characteristics in this study are characteristic in the intervention group and the control group. Comparison of characteristics including age, education and length of work in these two groups was statistically no significant difference

(p>0.05). The average age in the intervention group was 31 years with a range of 23-47 years, while the average age in the control group was 32 years with a range of 24-44 years. A person's age affects the level of safety and strength in thinking and working. The public belief about age is that someone who is more mature will be more trusted than someone who is considered not mature enough, so it can be concluded that as age increases, the more experience gained and the more experience will increase knowledge (Wela et al., 2023; Wijayanti et al., 2022).

Almost all respondents in the intervention group, namely 80%, had a higher level of education, while in the control group it was 72.5%. Judging from the element of education, it can be seen that education is a planned process in increasing one's knowledge so that it can be useful for that person, in this case it is knowledge about stunting. If teachers can monitor growth and detect stunting in children, it can help health workers in reducing stunting rates in the area (Fitriani et al., 2020; Hamsah et al., 2020). This is in line with research by Novitasari, (2022) that teachers who have higher education show a better understanding of child growth (Novitasari & Fauziddin, 2022).

Based on length of work / experience, as many as 72.5% in the intervention group had worked ≥ 5 years and as many as 75% in the control group. Person's experience and knowledge of child development affect readiness to provide stimulation for a child. Experience as a source of knowledge to obtain the truth of knowledge by repeating the knowledge gained in solving problems faced in the past (Kamiliyana et al., 2021; Saputri et al., 2021). According to research conducted by Suryandari and Purwanti (2018), the longer a person works, the more experienced he will be in his field of work, so the longer he becomes a preschool / kindergarten teacher, the experience to monitor growth in children will be better (Suryandari & Purwanti, 2018).

The effect of implementing the Stunting-Free Children (SFC) application on increasing kindergarten teachers' knowledge about stunting

Knowledge is acquired after people sense a particular object. Sensing occurs through the five human senses, namely the senses of sight, hearing, smell, taste and touch. However, most human knowledge is obtained from the eyes and ears. Kindergarten teachers' knowledge about stunting can be obtained through various means, including from mass media, friends, and health workers, and can also be obtained through internet media and health applications (Angkur, 2022).

Based on the results of statistical tests, it shows that there are differences in teacher knowledge scores before and after being given the SFC application. The application of the SFC application increased teacher knowledge by 24.5% or the use of the SFC application could increase kindergarten teachers' knowledge about stunting by 1.5 times compared to the control group. This situation is in accordance with research by research conducted by Utami (2019) which states that child growth monitoring programs can increase teacher knowledge (Utami, 2019). Similar to the report of the results of a study conducted by Suryandari and Purwanti (2018) that there is a relationship between the knowledge of PAUD/TK teachers about SDIDTK and the implementation of detection of developmental deviations (Suryandari & Purwanti, 2018).

The effect of the implementation of the Stunting-Free Children (SFC) application on improving kindergarten teachers' attitudes about stunting

A person's attitude about stunting is a person's tendency to approve or disagree with a statement submitted related to the problem of stunting. Information or education about stunting using android-based applications is expected to foster a better attitude towards early detection of stunting. Statistically, the results of this study showed no significant difference in attitude improvement in the intervention group and the control group with a $p>0.05$ value. This research is not in line with the results of research by Resmiati (2021) that android-based nutrition education media can improve respondents' attitudes about nutrition in children (Friscila, Us, et al., 2022; Resmiati, 2021). The results of research by Amaliah et al (2018) also showed that the use of the Healthy Toddler mobile application significantly increased respondents' attitudes in monitoring child growth and development (Amaliah, 2018).

Although the results of this study found that there was no effect of using the SFC application on improving the attitude of kindergarten teachers, this does not mean that attitudes are proven to be unrelated in teacher behavior in detecting stunting in children. This happens because basically attitude is a reaction that is still closed from a person to a stimulus or object. Based on the table of percentage of attitude answers about stunting in the two research groups obtained, from 13 attitude statement items there were 6 statement items <60% of respondents answered with a score of 4. The statement includes the stimulation of child growth referring to cases of stunting in children. The SFC of the effect of using the SFC application on increasing attitudes about stunting can also be caused by 20% in the intervention

group of teachers whose education is high school / equivalent and as many as 27% of teachers who have work experience <5 years. Therefore, education and experience need to be considered in the use of this SFC application. Nursalam (2008) stated that a person's attitude can be influenced by several factors, namely education, experience and age.

CONCLUSION

Based on the research conducted, there is an influence of the application of the Stunting-Free Children (SFC) application on increasing kindergarten teachers' knowledge about stunting and there is no influence of the application of Stunting-Free Children (SFC) on improving kindergarten teachers' attitudes about stunting. It is recommended that there is a need to improve the application features of the stages of child growth and development in children who are stunted with light capacity and attractive appearance so that it can make it easier for teachers to detect stunting and can improve teachers' knowledge and attitudes about stunting. And for further researchers, it is expected to develop other variables in the use of SFC applications. For practitioners, the SFC application can be used as one of the health education media in conveying information about stunting and detecting stunting so that the community, especially kindergarten / early childhood / family planning teachers can play an active role in the field of child health.

THANK YOU

Thank you to Poltekkes Kemenkes Pontianak for supporting this research activity.

BIBLIOGRAPHY

Amaliah, N. (2018). Pemakaian Aplikasi Mobile “Balita Sehat” Meningkatkan Pengetahuan dan Sikap Ibu dalam Memantau Pertumbuhan dan Perkembangan Balita. *Buletin Penelitian Kesehatan*, *46*(3), 155–168. https://doi.org/10.22435/bpk.v46i3.880

Angkur, M. F. M. (2022). Penerapan Layanan PAUD Holistik Integratif di Satuan PAUD. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, *6*(5), 4287–4296. https://doi.org/10.31004/obsesi.v6i5.2587

Davidson, S. M., Khomsan, A., & Riyadi, H. (2020). Status gizi dan perkembangan anak usia 3-5 tahun di Kabupaten Bogor. *Jurnal Gizi Indonesia (The Indonesian Journal of Nutrition)*, *8*(2), 143–148. https://doi.org/10.14710/jgi.8.2.143-148

Fitriani, A., Friscila, I., Mauyah, N., Elvieta, E., & Fatiyani, F. (2022). Faktor-Faktor yang Berhubungan dengan Stunting di Puskesmas Syamtalira Aron. *Jurnal Medikes (Media Informasi Kesehatan)*, *9*(1), 47–56.

https://doi.org/https://doi.org/10.36743/medikes.v9i1.342

Fitriani, A., Gurnida, D. A., & Rachmawati, A. (2020). Faktor-Faktor yang Berasosiasi pada Kejadian Stunting pada Bayi di Bawah Dua Tahun di Wilayah Kerja Puskesmas Pandrah Kabupaten Bireuen. *Care : Jurnal Ilmiah Ilmu Kesehatan*, *8*(3). https://doi.org/10.33366/jc.v8i3.1258

Fredy Akbar, K., Hamsa, Ambo, I. B., Darmiati, Hermawan, A., & Muhajir, A. M. (2021). *Strategi Menurunkan Prevalensi Gizi Kurang pada Balita*. Yogyakarta: Deepublish.

Friscila, I., Us, H., Fitriani, A., & Erlina, E. (2022). Hubungan Paritas terhadap Berat Lahir di RSUD Pangeran Jaya Sumitra. *Jurnal Medikes (Media Informasi Kesehatan)*, *9*(1), 91–100. https://doi.org/https://doi.org/10.36743/medikes.v9i1.343

Friscila, I., Wijaksono, M. ., Rizali, M., Permatasari, D., Aprilia, E., Wahyuni, I., Marsela, M., Asri, N. ., Yuliani, R., Ulfah, R., & Ayudita, A. (2023). Pengoptimalisasi Pengggunaan Buku Kia Pada Era Digital Di Wilayah Kerja Puskesmas Kandui. *Prosiding Seminar Nasional Masyarakat Tangguh*, 299–307. https://ocs.unism.ac.id/index.php/semnaspkm/article/view/1058

Friscila, I., Wijaksono, M. A., & Rizali, M. (2022). Analisis Kepuasan Pasien Dalam Pemberian Discharge Planning Menggunakan Prinsip Patient Centered Care di Rumah Sakit Sari Mulia Banjarmasin. *Dinamika Kesehatan: Jurnal Kebidanan dan Keperawatan*, *13*(2), 11–15. https://garuda.kemdikbud.go.id/documents/detail/3193597

Hamsah, I. A., Darmiati, D., & Mirnawati, M. (2020). Deteksi Dini Tumbuh Kembang Balita di Posyandu. *Jurnal Ilmiah Kesehatan Sandi Husada*, *9*(2), 1003–1008. https://doi.org/10.35816/jiskh.v12i2.441

Kamiliyana, K., Immawati, I., & Nurhayati, S. (2021). Penerapan Pendidikan Kesehatan pada Ibu tentang Pengetahuan Tumbuh Kembang Anak Usia Prasekolah (3-5 Tahun). *Jurnal Cendikia Muda*, *1*(3), 401–406. https://jurnal.akperdharmawacana.ac.id/index.php/JWC/article/view/231

Kemenkes RI. (2018). *Data dan Informasi Profil Kesehatan Indonesia 2017*. Jakarta : Kemenkes RI.

Lestari, M., Friscila, I., Us, H., Wahyuni, Y. F., Safina, S., & Hasibuan, S. R. (2022). Gerakan Pencegahan Stunting Melalui Pemberdayaan Masyarakat Di Desa Lancok Kecamatan Syamtalira Bayu. *Jurnal Abdimas ITEKES Bali*, *2*(1), 35–42. https://doi.org/https://doi.org/10.37294/jai.v2i1.448

Mauyah, N., Elvieta, E., Subki, S., Savina, S., Akla, N., Friscila, I., & Sari, S. P. (2022). Penyuluhan Pengolahan Makanan Bergizi untuk Anak di Desa Gampong Raya Tambo Kecamatan Peusangan Kabupaten Bireuen 2021. *Jurnal Abdimas ITEKES Bali*, *1*(2), 76–80. https://doi.org/https://doi.org/10.37294/jai.v1i2.374

Novitasari, Y., & Fauziddin, M. (2022). Analisis Literasi Digital Tenaga Pendidik pada Pendidikan Anak Usia Dini. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, *6*(4), 3570–3577. https://doi.org/10.31004/obsesi.v6i4.2333

Resmiati, R. (2021). Efektifitas Aplikasi Edukasi Gizi Remaja berbasis Android untuk Pencegahan Stunting. *Jurnal Endurance*, *6*(2), 443–451. https://doi.org/https://doi.org/10.22216/jen.v6i2.357

Riskesdas. (2018). Hasil Utama Riskesdas 2018. In *Kemenkes RI*. Jakarta: Kemenkes RI.

Saputri, S. D., Sari, S. A., & Immawati, I. (2021). Penerapan Pendidikan Kesehatan Tumbuh Kembang Pada Ibu Yang Memiliki Anak Usia Toddler (1–3 Tahun) Di RSUD Jend. Ahmad Yani Metro. *Jurnal Cendikia …*, *1*(4), 523–530. https://www.jurnal.akperdharmawacana.ac.id/index.php/JWC/article/view/246

Suryandari, A. E., & Purwanti, S. (2018). Analisis Pengetahuan Guru PAUD/TK tentang SDIDTK dengan Pelaksanaan Deteksi Penyimpangan Perkembangan Balita. *Jurnal publikasi Kebidanan*, *9*(1), 1–5. https://ojs.stikesylpp.ac.id/index.php/JBP/article/view/394

Utami, S. (2019). Meningkatkan Mutu Pendidikan Indonesia melalui Peningkatan Kualitas Personal, Profesional, dan Strategi Rekrutmen Guru. *Prosiding Seminar Nasional Pendidikan FKIP*, *2*(1), 518–527. https://jurnal.untirta.ac.id/index.php/psnp/article/view/5655

Wela, Y., Lito, P., Eda, L., & Sulastien, H. (2023). Gambaran Peran Orang Tua dalam Memberikan Sex Education pada Anak Remaja. *Jurnal Keperawatan*, *15*(1), 193–202. https://doi.org/https://doi.org/10.32583/keperawatan.v15i1.378

WHO. (2021). Levels and Trends in Child Malnutrition. *World Health Organization*.

Wijayanti, T., Pertiwi, H. W., & Lestari, B. D. (2022). Faktor Yang Berhubungan Dengan Kesadaran Pasien Tentang Protokol Kesehatan Pada Era New Normal. *ejurnal.stikeseub.ac.id*, *XIV*(01). https://doi.org/https://doi.org/10.35872/jurkeb.v14i01.514

Windayani, N. L. I., Dewi, N. W. R., Yuliantini, S., Widyasanti, N. P., Ariyana, I. K. S., Keban, Y. B., Mahartini, K. T., Daviq, N., Suparman, S., & Ayu, P. E. S. (2021). *Teori dan aplikasi pendidikan anak usia dini*. Aceh: Yayasan Penerbit Muhammad Zaini.