

USE OF THE "DESIKEMBANG" APPLICATION ON THE KNOWLEDGE OF PAUD TEACHERS

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ABSTRAK : PENGGUNAAN APLIKASI "DESIKEMBANG" TERHADAP PENGETAHUAN GURU PAUD

Latar Belakang: Angka kejadian anak yang mengalami keterlambatan pertumbuhan perkembangan diperkirakan sekitar 5-10. Usia anak 0-5 tahun merupakan fase kritis dalam perkembangan balita, karena otak anak sangat responsif terhadap rangsangan dan pengalaman. Perkembangan anak dipengaruhi oleh faktor jenis kelamin, ras, usia, genetik, kromosom, ekonomi, nutrisi, lingkungan sosial dan stimulasi psikologis. Data dari Puskesmas Sungai Betung tahun 2023 didapati capaian balita yang dipantau pertumbuhan dan perkembangan sebanyak 61,35% dan capaian balita yang dilayani SDIDTK sebanyak 46 orang (4,62%).

Tujuan: Untuk menganalisis pengaruh penggunaan aplikasi desikembang terhadap pengetahuan guru PAUD tentang tumbuh kembang anak usia dini di Kecamatan Sungai Betung Kabupaten Bengkayang.

Metode Penelitian: Desain penelitian yang digunakan yaitu penelitian *quasy experimental*. Populasi dalam penelitian ini seluruh guru PAUD di Kecamatan Sungai Betung Kabupaten Bengkayang berjumlah 30 orang, serta sampel dalam penelitian ini berjumlah 30 responden dengan teknik total sampling.

Hasil Penelitian: Berdasarkan hasil analisis univariat didapati pengetahuan sebelum diberikan pendidikan kesehatan menggunakan aplikasi desikembang dengan nilai *median* 45,00 dan pengetahuan setelah diberikan pendidikan kesehatan menggunakan aplikasi desikembang dengan nilai *median* 60,00. Hasil analisis bivariat melalui uji *wilcoxon* didapati pengetahuan responden sebelum dan setelah diberikan pendidikan kesehatan tentang tumbuh kembang anak usia dini menggunakan aplikasi desikembang yaitu 0,000 sehingga disimpulkan bahwa pendidikan kesehatan yang diberikan sangat efektif dalam peningkatan pengetahuan terkait tumbuh kembang anak usia dini.

Simpulan: Hasil analisis diperoleh terdapat pengaruh yang signifikan penggunaan aplikasi desikembang terhadap peningkatan pengetahuan guru PAUD tentang tumbuh kembang anak usia dini di Kecamatan Sungai Betung Kabupaten Bengkayang.

Saran: Guru PAUD dan fasilitas kesehatan terkait dapat mengkoordinir dan memberikan pemantauan tumbuh kembang yang terintegrasi terkait tahapan perkembangan anak sesuai usia, agar dapat membantu menemukan secara dini keterlambatan perkembangan dan dapat melakukan stimulasi sesuai usia anak.

Kata Kunci : Desikembang, Guru, PAUD, Pengetahuan

ABSTRACT

Background: The incidence of children experiencing developmental growth delays is estimated to be around 5-10. The age of 0-5 years is a critical phase in the development of toddlers, because the child's brain is very responsive to stimuli and experiences. Child development is influenced by factors such as gender, race, age, genetics, chromosomes, economics, nutrition, social environment and psychological stimulation. Data from the Sungai Betung Community Health Center in 2023 found that the achievement of toddlers who were monitored for growth and development was 61.35% and the achievement of toddlers served by SDIDTK was 46 (4.62%).

Objective: To analyze the effect of using the desikembang application on PAUD teachers' knowledge about early childhood growth and development in Sungai Betung District, Bengkayang Regency.

Research methods: The research design used is research *quasy experimental*. The population in this study consisted of all PAUD teachers in Sungai Betung District, Bengkayang Regency, totaling 30 people. The sample for this study included 30 respondents, selected using the total sampling technique.

Research result: Based on the results of the univariate analysis, the median knowledge score before being provided with health education using the DesiKembang application was 45.00, and the median knowledge score after the health education was 60.00. The bivariate analysis using the Wilcoxon test showed that the respondents' knowledge before and after receiving health education on early childhood growth and development through the

DesiKembang application had a p-value of 0.000. It was concluded that the health education provided was highly effective in increasing knowledge related to early childhood growth and development.

Conclusion: The analysis results showed a significant effect of using the DesiKembang application on increasing PAUD teachers' knowledge of early childhood growth and development in Sungai Betung Subdistrict, Bengkayang Regency.

Suggestion: Early childhood education teachers and related health facilities can collaborate to coordinate and provide integrated monitoring of child development stages according to their age. This aims to help detect developmental delays early and provide age-appropriate stimulation.

Keywords : Desikembang, Teacher, PAUD, Knowledge

INTRODUCTION

The stages of growth and development are highly critical periods in every child's life. Therefore, it is essential to pay attention to all factors that support and influence these stages. Growth and development are distinct events but are interrelated. Growth refers to observable changes in physical dimensions, including height, weight, and head circumference. However, the maturation of organ functions is when development truly comes into focus. The first six years are crucial for achieving the most favorable conditions for growth and development (Delfina, Sardaniah, and Sorena, 2023). Concerns about fine and gross motor development are among moderate brain disorders that affect approximately 5–25 percent of children worldwide, according to the World Health Organization (WHO). Meanwhile, according to Indonesia's Ministry of Health (Depkes RI), approximately 16% or 0.4 million toddlers in Indonesia have been identified as experiencing developmental delays, including issues with hearing, fine and gross motor skills, cognitive development, and speech (Dahlia, Putri and Rosdiana, 2023).

Internal and external factors influence development. Among the internal variables are chromosomes, gender, age, ethnic variations, and genetics. Environmental elements not directly related to the child's biology include factors such as socioeconomic status, food availability, and the level of psychological stimulation (Misniarti and Haryani, 2022).

In accordance with the Regulation of the Minister of Health of the Republic of Indonesia Number 66 of 2014 on monitoring child growth, development, and developmental disorders, the supervision of children's growth, development, and developmental disorders is carried out by kindergarten teachers in collaboration with parents and healthcare workers, both at primary healthcare facilities and in kindergarten settings (Ministry of Health of the Republic of Indonesia, 2014).

Early detection of growth and development is a crucial step in creating a strong future generation. The role of PAUD educators is vital in conducting early detection of growth and development. An educator's skill level significantly determines their ability to detect a child's development at an early stage. As an essential part of education, teachers must possess four fundamental competencies: pedagogical, professional, personal, and social. They must also have the ability to enhance these competencies through comprehensive education and training (Ramadhani and Sumanto, 2023).

RESEARCH METHODS

This study used a quantitative research method with a quasi-experimental design employing a one-group pretest and posttest design. The study has passed ethical approval from the Health Research Ethics Committee of Politeknik Kesehatan Kemenkes Pontianak, with ethical clearance number 173/KEPK-PK.PKP/VI/2024. The objective of this study was to analyze the effect of using the DesiKembang application on PAUD teachers' knowledge of early childhood growth and development in Sungai Betung Subdistrict, Bengkayang Regency. The population in this study consisted of all PAUD teachers in Sungai Betung Subdistrict, Bengkayang Regency, totaling 30 individuals. The sample used in this study was the entire population, consisting of 30 PAUD teachers, using the total sampling technique. The sample in this study meets the inclusion criteria, which is all early childhood education teachers who have a minimum of 3 years of work experience, while the exclusion criteria are teachers who are unable to attend during the research period. The research was conducted from April 29 to May 17, 2024. The measurement tool used was a questionnaire that had undergone validity and reliability testing. The results showed that the r-calculated value was greater than the r-table value, or all items had a value >0.361 , while the reliability test for the knowledge variable showed a score of 0.924. The research steps

included conducting a pretest with the samples, followed by an intervention where respondents were guided to download the Desi Kembang application and instructed on its usage. Respondents were given 25 minutes to watch the videos available in the DesiKembang application. After watching the videos, a posttest was conducted by distributing the questionnaire again to the respondents. Statistical analysis was performed using the Wilcoxon test.

RESEARCH RESULTS

Table 1
Frequency Distribution by Age

Age	Frequency	Presentation
<60 years	27	90
>60 years	3	10

Based on the table above on the age characteristics of PAUD teachers, it was found that

the majority of respondents were <60 years old, namely 28 people (90%), and a small percentage of respondents were ≥60 years old, namely 3 people (10%).

Table 2
Frequency Distribution by Education

Education	Frequency	Presentation
Intermediate (High School)	19	63,3
Higher (D3 & Bachelor)	11	36,7

Based on the table above, the characteristics of early childhood education (PAUD) teachers show that the majority of respondents have a secondary education level, totaling 19 people (63.3%), while nearly half of the respondents have a higher education level, totaling 11 people (36.7%).

Table 3
Wilcoxon test The Influence of Using the Desikembang Application on PAUD Teachers' Knowledge about Early Childhood Growth and Development

Variable	Median	Difference	Min-Max	SD	p-value*
Before	45,00		20-60	10,034	
After	60,00	15,00	45-100	14,826	0,000

The table above shows a significant difference in the knowledge of early childhood education (PAUD) teachers regarding child development and growth before and after using the Desikembang application, with a p-value of 0.000. The research results indicate that the Desikembang application is an effective tool for health education among PAUD instructors, helping them gain a deeper understanding of the importance of healthy development in early childhood years.

DISCUSSION

The growth and development stage is a very risky period for every child's life, therefore it is important to pay attention to all the factors that support and influence it. Development and growth are different but related events. Growth refers to changes in observable physical dimensions including height, weight, and head circumference. However, the maturation of organ function is where development truly shines. The first six years are very important to achieve the most favorable development and growth conditions (Delfina, Sardaniah and Sorena, 2023).

Concerns about fine and gross motor development are among the moderate brain

diseases that affect approximately 5–25 percent of children worldwide, according to the World Health Organization (WHO). Meanwhile, according to the Indonesian Ministry of Health (MOH RI), around 16% or 0.4 million toddlers in Indonesia have been identified as experiencing developmental delays, hearing loss, fine and gross motor skills, cognitive development, and speech (Dahlia, Putri and Rosdiana, 2023).

The brain is at its most flexible between the ages of 0 and 5 years, making it a formative period for toddlers. A child's growth will follow its inherent trajectory throughout this time if given the right stimulus. However, research by (Dahlia, Putri and Rosdiana, 2023) shows that toddler development can be negatively impacted by a lack of stimulation, which can have long-term impacts.

Internal and external influences impact development. Among these internal variables are chromosomes, gender, age, ethnic variations, and genetics. Environmental elements that are not directly related to a child's biology include things such as socioeconomic status, food availability, and level of psychological stimulation (Misniarti and Haryani, 2022).

Children from birth to six years old are the focus of early childhood education programs, which seek to prepare them for elementary school by fostering their intellectual, emotional, and physical development through the implementation of specific learning objectives. Kindergartens, play groups, child care centers, and other similar early childhood education programs are examples of early childhood education units or programs offered by educational institutions (Minister of Education and Culture of the Republic of Indonesia, 2014).

In accordance with the Regulation of the Minister of Health of the Republic of Indonesia Number 66 of 2014 concerning monitoring of children's growth, development and developmental disorders, supervision of children's growth, development and developmental disorders is carried out by kindergarten teachers together with parents and health workers, both in facilities basic health services as well as in kindergartens (Ministry of Health of the Republic of Indonesia, 2014). Early detection of growth and development is an important action to create a good next generation. The role of PAUD educators in this case is very important to carry out early detection of growth and development. The skill level of an educator greatly determines their ability to detect children's development from an early age. An important part of education, teachers must have four basic abilities: pedagogical, professional, personal, and social. They must also have the ability to improve this ability through comprehensive education and training (Ramadhani and Sumanto, 2023).

From the results of the research above, it shows that PAUD teachers' knowledge before being given health education using the *desikembang* application with a median value of 45.00. From the results of observing the knowledge of respondents before being given health education, it was found that almost 8 people (26.7%) answered the 10-question questionnaire correctly and 1 person (3.3%) answered the questionnaire correctly. 5 questions means that PAUD teachers' knowledge is still relatively low in anticipating disparities in early childhood development. The survey results confirm the results of Ramadhani and Sumanto's (2023) research which examined the skills of PAUD teachers in identifying and responding to signs of developmental delays in early childhood. Of the 33 teachers surveyed, 31 (or 94% of the total) demonstrated inadequate proficiency in this area. Furthermore, a small number of respondents have moderate skills in carrying out early childhood growth and development screening (two educators, or 6% of

the total), and no respondents (zero, or 0% of the total) have high skills in this area.

Child development is an important metric for measuring a child's well-being, showing how an individual's functioning matures over time. Therefore, it is important to monitor how children grow and develop. Premature babies, babies with low birth weight, babies who experience shortness of breath during pregnancy, babies with hyperbilirubinemia, babies who experience infections during birth, mothers with diabetes mellitus, and babies who are pregnant with twins should receive special attention (Wahyuni, 2018).

Abeng Research *et al.* (2021), regarding the impact of growth and development stimulation on children, shows that growth and development stimulation is well received, so it has a positive impact on gross and fine motor development, as well as on PAUD and Kindergarten education. Stimulation needs to be provided at home by the mother/family and caregivers because speech-language development and socialization independence are still lagging behind compared to the age of 4-5 years. Preschoolers love to play, play in groups, ask questions, imitate and create. By the time they reach four years of age, children can hop and hop on one foot easily and have good ball-catching skills. They can dress themselves, sketch, and jump rope with both feet by the time they are five years old.

From the results of the research above, it was found that there is an influence on PAUD teachers' knowledge about early childhood growth and development after providing health education using the *desikembang* application which can be seen in the paired sample test table with statistical test results (*Wilcoxon*) using computerization to obtain values *median* 60.00. From the research results, the difference in values was obtained *median* PAUD teacher knowledge after and before being given health education is 15.00. This resulted in an increase *median* PAUD teachers' knowledge about early childhood growth and development is between 60.00 and 45.00. From the results of research conducted by researchers, it was found that there was an influence of using the *desikembang* application on PAUD teachers' knowledge about early childhood growth and development which can be seen in the paired sample test table with the results of the test analysis *Wilcoxon* using computerization to obtain values *p-value* namely 0.000, so it was found that the intervention using the *desikembang* application given to respondents was very influential in increasing PAUD teachers' knowledge about early childhood growth and development.

Research conducted by Delfina, Sardaniah and Sorena (2023) on the topic of growth and development of preschool children found that teachers' ability to encourage healthy development has increased, and that parents should consult a health care provider as soon as they notice any abnormalities in their child's growth. -their children. Regular and focused stimulation, especially if given early, helps children grow and develop faster than children who don't get it, which is why it is so important for parents and educators to do their part to encourage children's growth and development. child. This finding is in line with the findings of Ramadhani and Sumanto (2023) who found that the skills of PAUD educators in implementing web-based early detection education had a significant impact on the results of early detection of early childhood growth and development. There were modifications and improvements in the ability of PAUD educators to use early detection of early childhood growth and development when this program was adopted.

This is in line with the findings of Nopriansyah, Wulandari and Pangastuti (2020) who attempted to create a mobile application to track the growth and development of children aged 4 to 6 years. They use quantitative research methods and a modified version of Borg and Gall's Research and Development model, following the steps of planning, designing, developing, testing, revising, piloting, final product, and deployment and implementation. Kindergarten children (ages four to six) and their instructors completed surveys to provide information for the study. The main experiment received perfect scores from 5 instructors, indicating its suitability for use. For the purpose of early diagnosis and effective monitoring of the growth and development of children aged 4 to 6 years, this research has developed a mobile-based health application. Teachers, parents and community members can use this application as an alternative growth and development tracking tool.

CONCLUSION

There is a significant impact of using the Desikembang application on the knowledge of early childhood education (PAUD) teachers regarding child development in Sungai Betung District, Bengkayang Regency. The median knowledge score of PAUD teachers after receiving health education was 60.00, which is higher compared to the median score before the health education, which was 45.00 and a p-value of 0.000. It can be concluded that the provided health education is highly effective in improving knowledge related to early childhood development.

SUGESTION

Early childhood education teachers and related health facilities can coordinate and provide integrated monitoring of child development stages according to the child's age. This is aimed at early detection of developmental delays and the provision of age-appropriate stimulation. Proper and prompt detection and intervention for developmental deviations are crucial, as the earlier they are identified, the sooner they can be addressed by competent healthcare professionals. Future researchers are encouraged to develop applications and implement them for all early childhood education teachers.

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