

Received: Januari 2026	Accepted: Mei 2026	Published: Juli 2026
Article DOI: http://dx.doi.org/10.24903/jam.v10i02.3904		

Stunting Prevention through Cadre Guidance on Early Detection of Toddler Growth and Development with The SDIDTK Application in Malingping – Banten

Rena Mailani

Universitas Pembangunan Nasional “Veteran” Jakarta

rena.mailani@upnvj.ac.id

Sri Gunda Fahriana Fahrudin

Universitas Pembangunan Nasional “Veteran” Jakarta

srigunda@upnvj.ac.id

Sri Yani

Universitas Pembangunan Nasional “Veteran” Jakarta

sri.yani@upnvj.ac.id

Indah Permatasari

Universitas Pembangunan Nasional “Veteran” Jakarta

indahpermatasari@upnvj.ac.id

Raufina Riandhani Mulyoto

Universitas Pembangunan Nasional “Veteran” Jakarta

raufinarmulyoto@upnvj.ac.id

Andini Azzahra

Universitas Pembangunan Nasional “Veteran” Jakarta

andini.azzahra@upnvj.ac.id

Abstract

Stunting reduction programs are ongoing in every region in Indonesia, as part of the effort to achieve Indonesia Emas 2045. Stunting prevention is carried out through various methods, including basic training in early detection of growth and development and appropriate stimulation to address challenges. Integrated health post (Posyandu) cadres, as the frontline providers of services for infants and toddlers, need to be trained in early detection of growth and development using a simple and fast tool, the Android-based SDIDTK application, is a simple, fast, and accessible instrument for measuring growth and development, available anywhere, anytime and easy to understand so it is hoped that everyone can apply it, including Posyandu cadres in Malingping sub-district, Lebak – Banten. Training or mentoring of Posyandu cadres in using the Android-based SDIDTK application to prevent stunting by early detection of toddler growth and development. This community service was implemented using counseling, mentoring, practice, and pre-test/post-test evaluation for 80 participants. There was an increase in the understanding and skills of Posyandu cadres regarding early detection of toddler growth and development, which was indicated by pre-test results of 70.75 and post-test results of 92.75. The

program increased cadre understanding and supporting early detection efforts to prevent stunting and developmental delays.

Keywords: *Physiotherapy; Development; Toddler; SDIDTK; Cadres.*

Background

The prevalence of stunting in Indonesia has decreased by 9.63 percent in the last five years, from 30.8 percent in 2018 to 21.5 percent in 2023 based on the Indonesian Health Survey (SKI). Reducing stunting rates continues to be a work program of the government, including the government of Lebak Regency, Banten Province. The Head of the Lebak Research and Development Agency (Bapelitbangda), Yosep Muhamad Holis, stated that based on the 2024 electronic Community-Based Nutrition Recording and Reporting (e-PPGBM) data in Lebak Regency, there was a decrease in stunting from 3.69 percent in February 2024 to 3.44 percent in April 2024. Therefore, the Lebak Regency Government is committed to continuing to suppress stunting with maximizing the role of integrated health posts (Posyandu) in early detection of child growth and development. Reducing stunting rates is not only about improving children's nutrition but also starting from good nutrition in adolescent girls, as women are the seeds of childbearing (Beal et al., 2018). Stunting is a major concern for the government because it can cause a decline in children's achievements, namely disruption of children's development such as motor, speech, social, cognitive and even mental development so early detection is needed so that children get stimulation and referrals from an early age (J et al., 2022).

The Lebak Regency Government is focusing on improving child nutrition and providing adequate sanitation in various sub-districts, one of which is Malingping Sub-district. Malingping District is located close to the Banten Provincial Government Hospital and still has a high stunting rate, with the discovery of one stunted child being treated at Malingping Hospital in 2025. This is due to a lack of public awareness about family nutrition and environmental hygiene. Easy access to health services does not guarantee a lower incidence of stunting, and developmental delays or disorders in children in Malingping Sub-district are lower than in other districts. Early developmental screening is necessary to identify developmental problems in stunted children or other children with normal development. Early developmental screening can begin at the front line, namely the Integrated Health Service Post (Posyandu), where communities regularly bring toddlers to the Posyandu (Putri et al., 2023). In fact, cadres, midwives, and other health workers in several villages across Indonesia, including in the Malingping District, routinely measure children's weight and height and provide complementary foods or nutritional supplements, without paying attention to child development assessments (Mertasih & Darmapatni, 2025). The child development assessments typically involve measuring head circumference. A child's developmental aspects cannot be assessed solely from head circumference. Child development is assessed through assessments ranging from gross motor skills, fine motor skills, speech skills, observation, and social skills (Putri et al., 2023).

Furthermore, developmental screenings are not conducted due to a lack of knowledge from cadres, the lack of developmental screening equipment and tools, and uncomfortable examination facilities, so that Posyandu cadres in Malingping need practical training and easily accessible tools to carry out early detection of toddler growth and development, namely by using the Android-based SDIDTK application (Sukanto et al., 2023). This results in many toddlers not being diagnosed early with developmental disorders such as motor or movement delays, speech delays, and mental retardation. Children are only diagnosed with developmental delays when they are older or have reached school age (Arista et al., 2025). Children who experience developmental delays are identified when they reach the age of playing with peers or starting school (Utami & Prasetyo, 2021). Children with developmental delays are targets of gossip and bullying in their communities. These children require comprehensive treatment, which can be quite expensive, especially when the disorder is detected late (Su et al., 2025). Parents of children who experience developmental disorders will experience impaired self-confidence, emotional disturbances and financial disturbances due to gossip from other

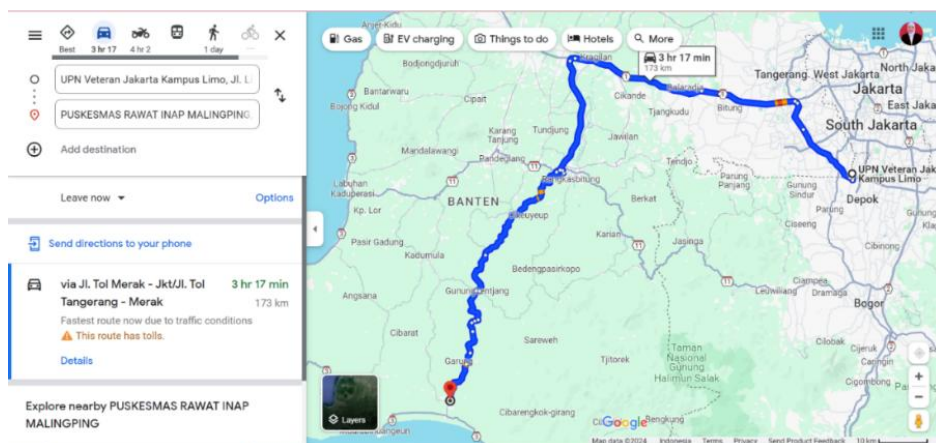
people and the large costs that must be incurred to treat these developmental disorders (Desweni, 2025).

The lack of knowledge of the community, especially Posyandu cadres, regarding early detection of development makes it difficult to find cases of developmental disorders or delays early on (Ndeot et al., 2022). The extensive list of items in the early developmental detection instrument makes it time-consuming to conduct developmental assessments with a limited number of cadres. Furthermore, the lack of equipment and tools for developmental screening, and the limited space of integrated health posts (Posyandu), also make early developmental screening difficult. The cadres' inability to detect early developmental milestones leads to a lack of awareness about appropriate stimulation, particularly for motor development. Children with developmental delays receive only spiritual treatment, such as visits to traditional healers, religious teachers (kyai), or religious teachers (ustad), leaving them to achieve normal development even though they are significantly behind in age.

Early developmental detection is crucial so that cadres can identify the child's normal development and children who are detected as having developmental delays can be immediately stimulated or receive appropriate treatment, such as referral to the nearest health care facility, so that the effects are not long-term or the delays do not worsen (Nasution, 2025). Early developmental detection is a child development examination carried out from the child's early age, including gross motor skills, fine motor skills, speech, observation, and social skills (Khayati et al., 2023).

To address this issue, health workers specializing in child development, lecturers specializing in child development, and students are tasked with providing training on early detection of toddler development and appropriate stimulation in the event of developmental delays. The goal of training cadres in Malingping District on early developmental detection and physiotherapy stimulation is to reduce the incidence of children with disabilities or developmental disorders. Cadres can identify developmental disorders experienced by toddlers earlier so they can receive stimulation more quickly, including physiotherapy stimulation. If the problem is severe, they can be immediately referred to the Banten Provincial Government Hospital for treatment by a pediatrician.

Malingping District was chosen as a target partner because previous research had been conducted in Malingping District on "The Effectiveness of Android-based SDIDTK and physical activities on the motor development of PAUD children", with the result that there was an increase in motor skills in children who were given routine physical activities and assistance in using Android-based SDIDTK for parents (Mailani et al., 2025). The Android-based SDIDTK application is suitable for cadres because it is easy to use, there are clear questions and instructions in measuring growth and development, the detection results can be known immediately, it can be done anywhere because it only uses a gadget, making it easier for Posyandu cadres to practice in the field.



Picture 1. Malingping Map

Method

The community service activity was carried out on Saturday, September 6, 2025, in Malingping District, Lebak Regency, Banten, with 80 participants consisting of Posyandu cadres from each village, representatives of the Community Health Center, and PKK members. The activity took place from 8:00 AM to 12:00 PM. The method used was counseling using presentation media, practice, and discussion on early detection of toddler growth and development using the Android-based SDIDTK application, as well as conducting pre- and post-tests. The number of questions in the pre- & post-test was 20 multiple choice questions about the cadres' knowledge of measuring child growth and development, with a score of 1 for correct answers and a score of 0 for incorrect answers. Pre and post scores were analyzed using SPSS.

The counseling and mentoring method was deemed appropriate for implementation in Malingping District, Lebak, Banten. This was based on the widespread adoption of community mentoring, which allows for the creation of a renewed lifestyle, allowing residents to choose development programs, particularly health development, in their village. The unprecedented comprehensive health mentoring of integrated health post (Posyandu) cadres made this community service a primary objective. The purpose of this community service was to increase knowledge, understanding, and skills for early detection of growth and development in toddlers. During this service program, the team provided lectures, discussions, consultations, check-ups, and demonstrations related to early detection of growth and development in toddlers using the Android-based SDIDTK application. Cadres directly practiced how to use the Android-based SDIDTK application and how to interpret it with full support from facilitators. This community service was implemented through:

1. Asset Mapping

The asset identification stage was conducted by identifying findings from village residents' input. This stage was implemented through Focus Group Discussions (FGDs) at the beginning of the activity. The FGDs aimed to align perceptions with the Malingping District. The FGDs were conducted among head of the community service team, the Malingping Sub-district Head, the Malingping Sub-district PKK Chair, and representatives of the Malingping Community Health Center. The data from the FGDs was needed to describe the current situation in Malingping District. The FGD data was then analyzed, and the community service team prepared a literature review for program development. The FGD result revealed that several integrated health service posts (Posyandu) already had their own buildings, but they needed knowledge and skills for early detection of growth and development.

2. Program Development

The second phase involved developing priority programs to be implemented during the community service program in Malingping District. The community service team mapped the FGD data after the FGD was conducted and then reviewed it against the literature or literature review to address the issues.

3. Program Activities

The program activities were implemented by preparing the team and village resources for the program implementation, with a timeframe agreed upon between the Malingping District Head and the community service team. At this stage, the community service team prepared media, logistics, and instruments, such as questionnaires, needed for the community service program.

4. Activity Implementation

The next stage was the implementation of the activities, which began with introductions of the community service team members, followed by completion of a pre-test questionnaire on early detection of growth and development, which was then evaluated. The activity then continued with a presentation and demonstration related to early detection of growth and development using the Android-based SDIDTK application.

5. Cadre Strengthening

The cadre strengthening phase is implemented after the activity implementation phase, with the goal of improving the knowledge and understanding of Posyandu cadres as an example for other Posyandu cadres.

6. Evaluation

The evaluation phase involves disseminating and communicating the results to the Malingping Sub-district Head, the Head of the Community Health Center, and stakeholders.

Results and Discussions

The community service activity was held on September 6, 2025, with 80 participants, consisting of representatives from the integrated health post (Posyandu) cadres from each village, representatives from the community health center (Puskesmas), and the Malingping sub-district PKK (Family Welfare Movement) committee.



Picture 2. Participant Registration and Health Check-up

Participants were predominantly women, who are cadres at each village integrated health post (Posyandu) in Malingping sub-district. The characteristics of respondents in this PKM activity are presented in Table 1.

Table 1. Characteristics of Respondents to PKM Activities in Malingping District

	Characteristics	n	%
Gender	Women	78	97.5
	Men	2	2.5
Ages	30 – 40 years	27	33.75
	41 – 50 years	34	42.5
	51 – 60 years	19	23.75
Education	Junior High School	20	25
	Senior High School	50	62.5
	Diploma 3	10	12.5

Before the presentation, a pretest was conducted to determine the participants' knowledge. After the resource person presented material on Early Detection of Toddler Growth and Development using the Android-based SDIDTK application, a posttest was conducted to determine the participants' understanding of the material.



Picture 3. Presentation of Material

The outreach activities resulted in increased knowledge and skills regarding measuring toddler growth and development among Posyandu cadres. This increased knowledge was demonstrated by a higher number of correct answers on the post-test than on the pre-test. The results are as follows: Table 2 Participant Knowledge Level

	Knowledge Presentation (%)
Pre	70.75
Post	92.75

To support early detection activities for optimal growth and development of toddlers, the community service team provided a tool for measuring the weight and length of babies to the head of the TP-PKK in Malingping District.



Picture 4. The team provided baby scales to the cadre.

Discussions

The results of community service illustrate that the majority of participants were women, a total of 78 people (97.5%), with the majority of participants aged over 41-50 years (42.5%), the majority of participants had a high school education level of 50 people (62.5%). These participant characteristics indicate important factors in their role as Posyandu cadres, where Posyandu cadres have the task of conducting initial checks on the growth and development of toddlers and providing initial education to parents of toddlers. The results of the health checks showed that the health status of the participants was quite good, indicated by blood pressure and pulse rates that were in the normal category. However, several participants experienced pre-hypertension and hypertension. This certainly requires attention from the community to better maintain their health, especially by doing physical activity and maintaining nutritional intake. Physical activity is related to blood pressure, where someone who is not active in physical activity (including exercise) will have higher blood pressure. The heart muscle will work harder in pumping blood, thereby increasing blood pressure. In addition, low levels of physical activity can increase the risk of obesity which has an impact on the occurrence of hypertension (Luo et al., 2023).

The material provided in this community service aims to provide education for Posyandu cadres regarding early detection of toddler growth and development using the Android-based SDIDTK application. The Android-based SDIDTK application is a rapid growth and development examination instrument (Windiyani et al., 2023). Participants were also provided with examples of growth and development examinations on the Android-based SDIDTK application directly. In addition, participants were also provided with practice on how to measure a baby's weight and length using a digital baby scale correctly and precisely. In the growth examination, participants only need to enter the child's date of birth, weight and length / height of the toddler. The results will appear on the gadget screen in the form of normal or stunting. In the development examination, participants only need to enter the child's date of birth, then questions will appear about gross motor skills, fine motor skills, speech and socialization according to chronological age, participants simply answer "Yes" or "No" according to the results of observations on the child or interviews with parents. The results will appear on the screen in the form of development according to age, doubtful or developmental deviations (Rahmi & Evareny, 2024). The material presented by the speaker could be understood by the participants, as shown by the posttest score which was higher than the pretest, with an average posttest score of 92.75.

The examination helps cadres interpret the results because the SDIDTK application is easy to use. According to the community service program, the SDIDTK application is effective as an early detection instrument for growth and development because it is easy to use (Rangkuti et al., 2022). The integrated health post (Posyandu) cadres were able to effectively implement the SDIDTK application for growth measurement. However, regular practice is required for smooth implementation. Furthermore, the Posyandu cadres suggested integrating the application with the National Civil Service Agency (BKN) system so that cadres would not have to repeatedly input data into multiple applications.

This community service project demonstrates that people's interactions with the internet and technology, even in rural areas, are not unfamiliar or afraid to use them. These results provide a positive perspective for encouraging the development of digital health through the Android-based SDIDTK application, which aims to detect early signs of toddler growth and development. As Lela Triana et al. stated, the application can help facilitate community examinations, monitoring, and data entry (Triana et al., 2021).

The results of this community service provide insight into the increased knowledge and understanding of Posyandu cadres in Malingping District regarding early detection of toddler growth and development, thus creating a community free from stunting and developmental disorders. This aligns with Sri Kusumadewi's statement that the Posyandu Information System assists cadres in storing data and generating reports on maternal and child health (Kusumadewi et al., 2019). Increasing the knowledge and skills of Posyandu cadres in early detection of growth and development means that stunting in children can be addressed as early as possible, so it is hoped that stunting cases can be reduced. In addition, according to Sri Hendrawati et al., healthy behavior changes are implemented in the form of prevention, early detection, treatment of disease, pain management, and optimizing professional health workers (Hendrawati et al., 2018).

Conclusion and Recommendation

Community service activities using training and mentoring methods have an impact on increasing the knowledge of integrated health post (Posyandu) cadres regarding early detection of toddler growth and development, as measured by pre-test and post-test with a value of 70.75% to 92.75%. Participants gained new skills related to early detection of growth and development using the Android-based SDIDTK application, demonstrated through hands-on practice. The Posyandu staff found the activity helpful, enabling early detection of delayed or problematic growth and development. Therefore, stunting and disabilities in children can be identified early and timely interventions can be implemented. This activity is expected to provide benefits and be continued in real practice, namely conducting toddler growth and development checks using the Android-based SDIDTK application at every Posyandu activity. Based on input from cadres and midwives, several additional features are still needed in this system. Future researchers can develop this application further, namely by integrating the SDIDTK application with BKKBN data so that the data can be directly connected to data at BKKBN in order to provide benefits to users to improve services.

Acknowledgement

This community service program is a collaborative effort, and we extend our gratitude to the Institute for Research and Community Service (LPPM) of the Veteran National Development University, Jakarta, as the grant provider, and the Malingping District Government in Lebak, Banten, for facilitating this program. We also extend our gratitude to the Community Service Program (PKM) team and Universitas Sultan Ageng Tirtayasa, Serang, for their collaboration.

Daftar Pustaka

- Arista, D. M., Nurvitriana, N. C., Wijayanti, K., Mustofa, V. F., Khusmitha, Q. N., & Wahyuni, S. (2025). Deteksi Dini Perkembangan Anak Usia Dini dengan Kuesioner Pra Skrining Perkembangan (KPSP). *Kumawula: Jurnal Pengabdian Kepada Masyarakat*, 8(1), 115–125. <https://doi.org/https://doi.org/10.24198/kumawula.v8i1.56089>
- Beal, T., Tumilowicz, A., Sutrisna, A., Izwardy, D., & Neufeld, L. M. (2018). A review of child stunting determinants in Indonesia. *Maternal & Child Nutrition*, 14, 1–10. <https://doi.org/10.1111/mcn.12617>
- Desweni, E. (2025). Faktor Risiko Stunting pada Balita di Indonesia: Literature Review. *Jurnal Kesehatan Saintika Meditory*, 8(1), 328–338. <https://doi.org/http://dx.doi.org/10.30633/jsm.v8i1.3170>
- Hendrawati, S., Mardhiyah, A., Mediani, H. S., Nurhidayah, I., & Mardiah, W. (2018). Pemberdayaan Kader Posyandu dalam Stimulasi Deteksi dan Intervensi Dini Tumbuh Kembang (SDIDTK) pada Anak Usia 0 – 6 Tahun. *MKK*, 1(1), 39–58. <https://doi.org/https://doi.org/10.24198/mkk.v1i1.17263>
- J, R. F., Huljannah, N., & Rochmah, T. N. (2022). Program Pencegahan Stunting di Indonesia : A Systematic Reviw. *Media Gizi Indonesia (National Nutrition Journal)*, 17(3), 281–292. <https://doi.org/DOI: 10.20473/mgi.v17i3.281-292>
- Khayati, F. N., Agustiningrum, R., & Mulyaningsih, D. (2023). Upaya Optimalisasi Pertumbuhan dan Perkembangan Anak Usia Pra Sekolah melalui Deteksi Dini Tumbuh Kembang. *Jurnal Inovasi Dan Pengabdian Masyarakat Indonesia*, 2(2), 6–9. <https://doi.org/https://doi.org/10.26714/jipmi.v2i2>
- Kusumadewi, S., Kurniawan, R., & Wahyuningsih, H. (2019). Implementasi Sistem Informasi Posyandu Berbasis Web dan Androdi di Desa Bimomartani. *Jurnal Pengabdian Dan Pemberdayaan Masyarakat*, 3(2), 351–359. <https://doi.org/https://doi.org/10.30595/jppm.v3i2.4903>
- Luo, X., Tao, M., Lu, J., Lu, L., & He, X. (2023). The effect of different combinations of physical activity and natural environment videos on children ’ s attention levels between class breaks. *BMC Pediatrics*, 23(60), 1–17. <https://doi.org/10.1186/s12887-023-03868-8>
- Mailani, R., Oktarina, M., Bachtar, F., & Magdalena, J. Y. (2025). Effectiveness of Physical Activity and Android-based SDIDTK Application on Motor Development of Preschool Children. *FISIO MU: Physiotherapy Evidences*, 6(2), 137–142. <https://doi.org/https://doi.org/10.23917/fisiomu.v6i2.8426>
- Mertasih, N. M. N., & Darmapatni, M. W. G. (2025). Perilaku Kader Posyandu Balita dalam Deteksi Dini Stunting. *KOSALA: Jurnal Ilmu Kesehatan*, 13(1), 65–76. <https://doi.org/https://doi.org/10.37831/kjik.v13i1>
- Nasution, D. M. (2025). Faktor Risiko Terjadinya Stunting pada Balita. *Jurnal Implementa Husada*, 6(2), 175–186. <https://doi.org/https://doi.org/10.30596/jih.v6i2.19451>
- Ndeot, F., Sum, T. A., & Ndinduk, F. D. (2022). Analisis Pertumbuhan dan Perkembangan Anak Usia Dini Analysis of Early Childhood Growth and Development 1 | Jurnal Lonto Leok : Vol 4 , No 2 November 2022 2 | Jurnal Lonto Leok : Vol 4 , No 2 November 2022. *Jurnal Lonto Leok*, 4(2), 1–12. <https://doi.org/https://doi.org/10.36928/jllpaud.v4i2.1416>
- Putri, P. S., Indrayani, T., & Silawati, V. (2023). Faktor - Faktor yang Berhubungan dengan

- Perkembangan Anak Usia 12-24 Bulan. *Jurnal Keperawatan Jiwa*, 11(4), 929–938. <https://doi.org/10.26714/jkj.11.4.2023.929-938>
- Rahmi, S. L., & Evareny, L. (2024). Pendampingan PAUD dalam Pemantauan Tumbuh Kembang Sebagai Upaya Pencegahan Stunting dengan Aplikasi SDIDTK. *Jurnal Salingka Abdimas*, 4(1), 73–83. <https://doi.org/https://doi.org/10.31869/jsam.v4i1.4866>
- Rangkuti, W. F. S., Susito, & Sudarto. (2022). Pelatihan dan Pendampingan pada Kader dalam Penggunaan Aplikasi KPSP Mobile Berbasis Android dalam Mendeteksi Penyimpangan Perkembangan Anak Prasekolah. *Jurnal Peduli Masyarakat*, 4(4), 577–584. <https://doi.org/https://doi.org/10.37287/jpm.v4i4.1331>
- Su, W., Jia, H., Yang, L., Zhang, J., Wei, Z., & Tsikwa, P. (2025). The etiology of attention deficit disorder with hyperactivity: A protocol for an umbrella review. *PLoS ONE*, 1–9. <https://doi.org/10.1371/journal.pone.0318141>
- Sukanto, I. S., Juwita, S., & Argaheni, N. B. (2023). Upaya pencegahan dan penanganan stunting dengan pengenalan program siganting melalui kader di Kota Surakarta. *JMC: Journal Of Midwifery in Community*, 1(2), 11–23. <https://doi.org/https://doi.org/10.20961/jmc.v1i2.79355> ISSN:
- Triana, L., Andryani, R., & Kurniawan. (2021). Aplikasi Monitoring Data Imunisasi Berkala Untuk Meningkatkan Pelayanan Posyandu Menggunakan Metode RAD Berbasis Android. *Jurnal SISFOKOM*, 10(01), 106–112. <https://doi.org/https://doi.org/10.32736/sisfokom.v10i1.1039>
- Utami, F., & Prasetyo, I. (2021). Pengasuhan Keluarga terhadap Perkembangan Karakter Disiplin Anak Usia Dini. *Jurnal Obsesi: Jurnal Pendidikan Anak Usia Dini*, 5(2), 1777–1786. <https://doi.org/10.31004/obsesi.v5i2.985>
- Windiyan, W., Sudilawati, S., & Rismayanti, T. (2023). Pengaruh Aplikasi SDIDTK Berbasis Android terhadap Pelaksanaan Stimulasi Deteksi Intervensi Dini Tumbuh Kembang Anak. *Jurnal Ilmu Keperawatan Dan Kebidanan*, 14(1), 33–37. <https://doi.org/https://doi.org/10.26751/jikk.v14i1.1612>