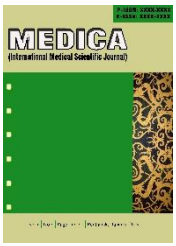
MEDICA

(International Medical Scientific Journal)
Vol.8, No.5, May 2026, pp. 326 – 333
ISSN 2622-660X (Online), ISSN 2622-6596 (Print)
https://journal.ahmareduc.or.id/index.php/medica



The Effect of the Pre-Screening Questionnaire for Child Development on Increasing Parental Compliance in Monitoring Child Development

Matje Meriaty Huru[1]✉, Kamilus Mamoh[1], Diyan Maria Kristin[1], Agustina Abuk Seran[1], Mariana Ngundju Awang[1], Ni Luh Made Diah Putri Anggraeningsih[1], Maria Florentina Nining Kosad[1]

[1] Department of Midwifery, Politeknik Kesehatan Kementerian Kesehatan Kupang, Kupang City, East Nusa Tenggara, Indonesia

Info Article

Article History:
Received:
31 March 2026
Accepted:
29 May 2026
Published:
31 May 2026

Keywords:
Child Development
Monitoring
Parental Compliance
KPSP
Developmental Screening
Early Childhood

Abstract

Early childhood represents a critical period for growth and development that substantially influences the quality of future human resources. Therefore, regular developmental monitoring is essential to ensure the early identification of developmental problems. However, parental compliance with child development monitoring remains suboptimal, including in East Penfui Village. The Pre-Screening Developmental Questionnaire (PSDQ/KPSP) is a practical and user-friendly tool that may enhance parental involvement in developmental surveillance. This study aimed to analyze the effect of KPSP utilization on parental compliance in monitoring child development. A pre-experimental study with a one-group pretest–posttest design was conducted among 64 parents of children aged 0–6 years selected through purposive sampling. Data were collected using a respondent characteristics questionnaire, a parental compliance questionnaire, and the KPSP as the intervention instrument. Descriptive statistics were used to summarize respondent characteristics, while the Wilcoxon Signed Rank Test was employed to assess differences in compliance scores before and after the intervention due to the non-normal distribution of data (Shapiro–Wilk test, $p < 0.05$). The results showed that most respondents were aged 25–35 years, had completed senior high school education, were housewives, and had two to three children. Parental compliance scores increased significantly following the intervention, with the mean score rising from 56.25 ± 10.32 before KPSP implementation to 82.40 ± 8.15 after the intervention. The Wilcoxon Signed Rank Test demonstrated a statistically significant difference between pretest and posttest compliance scores ($p < 0.001$). The findings indicate that the use of KPSP significantly improves parental compliance in monitoring child development. Integrating KPSP into community-based child health services may strengthen parental participation in developmental surveillance and support the early detection of developmental delays.

Corresponding Author:
✉ Matje Meriaty Huru
Department of Midwifery, Politeknik Kesehatan Kementerian Kesehatan Kupang, Kupang City, East Nusa Tenggara, Indonesia
Email: atiaureliapaul@gmail.com

1. INTRODUCTION

Early childhood represents a critical period of growth and development that profoundly influences the quality of future human resources (Attanasio, Cattan & Meghir, 2022; Mastorci et al., 2024). This stage, often referred to as the “golden age,” is characterized by rapid physical, cognitive, emotional, and social development, making continuous monitoring essential to ensure that developmental milestones are achieved appropriately (Nurani et al., 2025; Yulianis, Maswar & Dahliana, 2025; Zamzami, Wahyuni, & Reswita, 2025). The World Health Organization reports that approximately 43% of children in low and middle-income countries are at risk of developmental delays, while an estimated 5–10% of children worldwide experience developmental disorders (Rofi’ah et al., 2025). These figures highlight the urgent need for effective strategies to support early detection and intervention. Furthermore, family-based interventions, particularly those involving parents as primary caregivers, have been shown to significantly improve children's cognitive, language, and socio-emotional development (Maheswari et al., 2025).

Parental involvement plays a pivotal role in monitoring child development and identifying potential developmental problems at an early stage. In Indonesia, children under five years of age account for approximately 23.7 million individuals, representing nearly 10% of the total population. It is estimated that 1–3% of Indonesian children experience developmental delays, while approximately 4.5–6.7 million children face various developmental problems (Batlajery et al., 2021). Moreover, the prevalence of developmental disorders among Indonesian children ranges from 13% to 18%, indicating that developmental challenges remain a significant public health concern (Miniharianti et al., 2023). To address this issue, the Indonesian government has implemented the Early Stimulation, Detection, and Intervention of Growth and Development (SDIDTK) program, which includes the Developmental Pre-Screening Questionnaire (Kuesioner Pra Skrining Perkembangan/KPSP) as a practical and user-friendly tool for the early detection of developmental deviations by both healthcare providers and parents (Kementerian Kesehatan Republik Indonesia, 2021).

Previous studies have demonstrated the effectiveness of KPSP in enhancing parental participation in developmental monitoring. Research conducted by Rofi’ah et al. (2025) reported that the implementation of KPSP significantly increased maternal compliance in monitoring child development, rising from 15.6% before intervention to 84.4% after intervention. Similarly, another study found a significant association between parental compliance and child developmental monitoring outcomes using KPSP ($p = 0.001$), suggesting that greater parental involvement contributes positively to the quality of child growth and development (Rofi’ah et al., 2025). In addition to improving compliance, KPSP-based education has been shown to strengthen parents’ knowledge and skills in independently assessing their children’s developmental progress.

Despite these benefits, parental compliance in developmental monitoring remains suboptimal in many communities. Several factors have been identified as barriers to compliance, including educational background, employment status, limited time availability, and insufficient knowledge regarding the importance of developmental stimulation and early detection (Miniharianti et al., 2023). These challenges may hinder parents from consistently monitoring their children’s development and utilizing available screening tools. Consequently, effective interventions are still required to increase parental awareness, engagement, and compliance in developmental surveillance activities.

In East Penfui Village, preliminary observations and interviews with several parents revealed that routine developmental monitoring using KPSP was not commonly practiced.

Many parents reported limited understanding of how to use the KPSP, insufficient time to conduct developmental assessments, and inadequate support from healthcare workers. Additionally, suboptimal implementation of Posyandu activities and the lack of continuous educational programs further contributed to low parental compliance in monitoring child development. These findings indicate a gap between the availability of developmental screening tools and their actual utilization within the community.

Given the importance of early developmental monitoring and the potential role of KPSP in strengthening parental engagement, further investigation is warranted. Therefore, this study aimed to analyze the effect of KPSP utilization on improving parental compliance in monitoring child development among parents of children aged 0–6 years in East Penfui Village, Central Kupang District, Kupang Regency.

2. METHOD

This research uses a pre-experimental design in the form of a one-group pretest-posttest design. In this design, researchers measured parental compliance in monitoring child development before (pretest) and after (posttest) giving an intervention in the form of the use of the Developmental Pre-Screening Questionnaire (KPSP). The sample consisted of 64 parents with children aged 0–6 years who met the inclusion and exclusion criteria. The sample was selected using a purposive sampling technique. The inclusion criteria were: parents who had children aged 0–6 years, were willing to be respondents, could read and write, and were domiciled in East Penfui Village, while the exclusion criteria were: parents who did not participate in the entire series of research and children with serious illnesses or severe congenital abnormalities. The sampling technique used was purposive *sampling*, namely the selection of samples based on certain criteria set by the researcher. The independent variable in this study is the use of the Developmental Pre-Screening Questionnaire (KPSP), while the dependent variable is Parental compliance in monitoring child development

The instruments used in this study include: a questionnaire on respondent characteristics (age, education, occupation, number of children), a parental compliance questionnaire used to measure the level of compliance in monitoring child development before and after the intervention, and a Pre-Screening Development Questionnaire (KPSP) used as an intervention tool to assess child development according to age. The compliance instrument will be tested: validity test using Pearson correlation and reliability test using Cronbach's alpha ($\alpha \geq 0.70$).

Data analysis with univariate analysis to describe the characteristics of respondents, distribution of compliance before and after the intervention, presented in the form of a frequency distribution table, while bivariate analysis was used to determine the effect of KPSP on parental compliance. Statistical tests used: Paired sample T-Test (if the data is normally distributed) and Wilcoxon signed-rank test (if the data is not normal) with a significance level: $\alpha = 0.05$. This study pays attention to the principles of research ethics, namely:*Informed Consent, confidentiality, anonymity, beneficence dan non-maleficence*. This research was approved by the Research Ethics Committee of the Noor Huda Mustofa University and written informed consent was obtained from all participants prior to data collection.

3. RESULTS AND DISCUSSION

Table 1. Distribution of Respondent Characteristics.

Characteristic	Frequency (n)	Percentage (%)
Age		

Characteristic	Frequency (n)	Percentage (%)
< 25 years	12	18.8
25–35 years	34	53.1
> 35 years	18	28.1
Education		
SD	10	15.6
SMP	18	28.1
SMA	28	43.8
College	8	12.5
Work		
Housewife	36	56.3
Self-employed	14	21.9
Civil Servants/Private Sector	14	21.9
Number of children		
1 child	20	31.3
2–3 children	32	50.0
>3 children	12	18.8

Based on Table 1, it shows that the majority of respondents are aged 25–35 years (53.1%), have a high school education (43.8%), work as housewives (56.3%), and have 2-3 children, as many as 32 people (50.0%).

Based on the research results, most of the respondents were in the age range of 25-35 years (53.1%). This age is included in the productive age category and is psychologically mature in carrying out the role. Based on Table 1, most of the respondents were aged 25-35 years (53.1%), had a high school education (43.8%), worked as housewives (56.3%), and had 2-3 children totaling 32 people (50.0%).

Based on the research results, the majority of respondents were between 25 and 35 years of age (53.1%). This age group falls within the productive age category and is psychologically mature in carrying out the role of parents. At this age, individuals generally have better physical, emotional, and cognitive readiness to care for children, including monitoring their development. Research by Haryanti et al. (2024) states that more mature maternal age is associated with increased decision-making abilities related to children's health, including early detection of growth and development (Haryanti et al., 2024). This is also supported by international research by Jeong et al. (2016), which shows that parents in early to middle adulthood have a higher level of involvement in stimulating and monitoring their children's development compared to younger parents (Jeong et al., 2016).

In terms of education, the majority of respondents had a high school education (43.8%). Education level plays a significant role in shaping parents' knowledge and understanding of the importance of monitoring child development. Higher education tends to improve the ability to receive and understand health information. In terms of education, the majority of respondents had a high school education (43.8%). Education level plays a significant role in shaping parents' knowledge and understanding of the importance of monitoring child development. Higher education tends to improve the ability to receive and understand health information. Furthermore, research by Bornstein (2013) stated that parental education is positively correlated with parenting quality and optimal stimulation of child development (Bornstein, 2013). Therefore, the high school education held by the majority of respondents can be a foundation for receiving educational interventions related to the KPSP.

Based on occupation, the majority of respondents were housewives (56.3%). This situation provides mothers with greater opportunities to spend time directly caring for and monitoring their children's development. Housewives generally have greater time flexibility than mothers who work outside the home. This is in line with international research by McCoy et al. (2021), which states that parental time availability influences the intensity of interaction and involvement in child development (McCoy et al., 2021).

Furthermore, the number of children in the family is also a factor influencing parental attention in monitoring child development. The study results showed that most respondents had 2–3 children (50.0%). A smaller number of children allows parents to focus more on providing attention and monitoring each child. Research by Kong and Yasmin (2022) states that the number of children in a family is related to the level of attention and quality of parenting, where the greater the number of children, the more divided parental attention tends to be (Kong & Yasmin, 2022). This is also supported by international research by Lin, Schleider, & Eaton (2021), which states that the number of children in a family can influence the quality of stimulation and interaction provided to children (Lin, Schleider, & Eaton, 2021)

Overall, the characteristics of the respondents in this study indicate conditions that are quite supportive of child development monitoring, both in terms of age, education, employment, and number of children. This combination of factors plays a role in shaping parental compliance with the use of the KPSP. This suggests that educational interventions such as the KPSP will be more effective when administered to groups with characteristics that are ready to receive information and have sufficient time to care for their children.

Table 2. Distribution of Parental Compliance in Monitoring Child Development.

Variable	Mean ± SD (pg/mL)	Median (IQR) (pg/mL)	Min-Max	Normality (Shapiro-Wilk p)	Z	p-value
Before	56.25 ± 10.32	55 (50–62)	35-75	0.021	-6.852	0.000
After	82.40 ± 8.15	83 (78–88)	60-95	0.034		

The results of the study showed a significant increase in parental compliance after the intervention using the KPSP. The average compliance value increased from 56.25 ± 10.32 pg/mL to 82.40 ± 8.15 pg/mL. This increase indicates that the KPSP is effective in increasing parental involvement in monitoring child development. The intervention using the KPSP was able to significantly increase maternal compliance from a low to a high category after being provided with education and guidance. The structured use of the KPSP can increase active parental participation in monitoring child growth and development.

The results of the normality test using the Shapiro-Wilk showed that the compliance data before and after the intervention were not normally distributed ($p < 0.05$), so the analysis was continued using the Wilcoxon Signed-Rank Test. The results of the Wilcoxon test showed a p-value = 0.000 ($p < 0.05$), which means there is a significant influence between the use of KPSP and increased parental compliance in Child Development Monitoring. This finding is consistent with research by Rambe and Sebayang (2020), which showed a significant difference in maternal compliance before and after the use of KPSP with a p-value < 0.05 (Rambe & Sebayang, 2020). In addition, research by Rofi'ah et al. (2025) also found that the use of KPSP had a significant effect on increasing parental involvement in monitoring child development ($p = 0.001$) (Rofi’ah & Islami, 2025).

The increase in compliance in this study can be explained by the characteristics of the KPSP as a simple, practical, and easy-to-use screening tool for parents. This convenience allows parents to conduct independent monitoring at home without having to always rely on health workers. Research by Rifai et al. (2025) showed that the use of the KPSP, including in digital form (e-KPSP), significantly improved parents' abilities and skills in early detection of child development ($p = 0.000$) (Rifai, Qarragita, & Ramdani, 2025). This indicates that ease of access and use of the tool are important factors in increasing compliance.

Furthermore, education and support during interventions also play a significant role in increasing parental compliance. The health education provided helps improve parental knowledge, attitudes, and awareness of the importance of early detection of child development. Research by Herawati et al. (2024) found that KPSP-based education significantly improved parental understanding of child development screening (Herawati & Herlina, 2024). This finding is supported by international research by Jeong et al. (2016), which found that family-based interventions accompanied by education can increase parental involvement in supporting optimal child development (Jeong et al., 2016).

From a public health theory perspective, this increase in compliance can be explained by behavioral changes influenced by increased knowledge and awareness. According to the health promotion model, a person's health behavior is influenced by predisposing factors such as knowledge and attitudes. In this context, the use of KPSP as an educational medium can increase parental awareness and encourage them to be more active in monitoring their child's development. This is in line with research by Black et al. (2021), which states that active parental involvement in monitoring and stimulating child development significantly contributes to improving children's cognitive and socio-emotional development (Black et al., 2021).

Thus, the results of this study confirm that the use of the KPSP serves not only as a screening tool but also as an effective educational tool to increase parental compliance. This intervention is highly relevant for implementation in primary health care programs such as integrated health posts (Posyandu) and community health centers (Puskesmas) to improve the quality of ongoing child growth and development monitoring.

4. CONCLUSION

There was a significant impact of the use of KPSP on increasing parental compliance in monitoring child development. The KPSP is recommended for regular use in primary healthcare facilities as a screening and education tool.

REFERENCES

Attanasio, O., Cattan, S., & Meghir, C. (2022). Early childhood development, human capital, and poverty. *Annual Review of Economics,* 14(1), 853-892. https://doi.org/10.1146/annurev-economics-092821-053234

Batlajery, J., Masitoh, S., Raidanti, D., & Maryana, M. (2021). *Kuesioner Pra-Skrining Perkembangan (KPSP) [Developmental Pre-Screening Questionnaire (DPSQ)].* Makassar: Yayasan Barcode.

Black, M. M., Walker, S. P., Fernald, L. C., Andersen, C. T., DiGirolamo, A. M., Lu, C., ... & Grantham-McGregor, S. (2017). Early childhood development coming of age: science through the life course. *The lancet,* 389(10064), 77-90. https://doi.org/10.1016/S0140-6736(16)31389-7

Bornstein M. H. (2013). Parenting and child mental health: a cross-cultural perspective. *World psychiatry,* 12(3), 258–265. https://doi.org/10.1002/wps.20071

Haryanti, F., Hartini, S., Akhmadi, Andarwati, F., Risnawati, H., Pratiwi, A. N., Kusumawati, A. S., Cahyani, R. D., & Lusmilasari, L. (2024). Maternal knowledge on nutritional-focused nurturing care and associated factors among women with stunted children aged 6-23 months in Yogyakarta, Indonesia: A cross-sectional study. *Belitung nursing journal,* 10(4), 472–480. https://doi.org/10.33546/bnj.3481

Herawati, Y., Herlina, L., & Arini, W. (2024). Education and Socialization of Pre Screening Developmental Questionnaire for Early Detection of Child Development. *Jurnal Ilmiah Pengabdian Masyarakat Bidang Kesehatan (Abdigermas)*, 2(1), 1–6. https://doi.org/10.58723/abdigermas.v2i1.146

Jeong, J., McCoy, D. C., Yousafzai, A. K., Salhi, C., & Fink, G. (2016). Paternal stimulation and early child development in low-and middle-income countries. *Pediatrics,* 138(4), e20161357. https://doi.org/10.1542/peds.2016-1357

Kementerian Kesehatan Republik Indonesia. (2021). *Pedoman pelaksanaan stimulasi, deteksi, dan intervensi tumbuh kembang anak [Guidelines for the Implementation of Stimulation, Screening, and Intervention in Child Growth and Development].* Jakarta: Kementerian Kesehatan Republik Indonesia.

Kong, C., & Yasmin, F. (2022). Impact of Parenting Style on Early Childhood Learning: Mediating Role of Parental Self-Efficacy. *Frontiers in psychology,* 13, 928629. https://doi.org/10.3389/fpsyg.2022.928629

Lin, S. Y., Schleider, J. L., & Eaton, N. R. (2021). Family Processes and Child Psychopathology: A Between- and Within-Family/Child Analysis. *Research on child and adolescent psychopathology,* 49(3), 283–295. https://doi.org/10.1007/s10802-020-00749-x

Maheswari, N. M. A. R., Sebayang, N. E., Puspita, L. M., & Utami, P. A. S. (2025). Deteksi Dini Pertumbuhan dan Perkembangan Anak melalui KPSP di Desa Singakerta, Gianyar, Bali [Early Detection of Child Growth and Development through the KPSP in Singakerta Village, Gianyar, Bali]. *Jurnal Abdi Masyarakat Indonesia*, 5(2), 629-636.

Mastorci, F., Lazzeri, M. F. L., Vassalle, C., & Pingitore, A. (2024). The transition from childhood to adolescence: Between health and vulnerability. *Children,* 11(8), 989. https://doi.org/10.3390/children11080989

McCoy, D. C., Peet, E. D., Ezzati, M., Danaei, G., Black, M. M., Sudfeld, C. R., ... & Fink, G. (2016). Early childhood developmental status in low-and middle-income countries: national, regional, and global prevalence estimates using predictive modeling. *Plos medicine,* 13(6), e1002034. https://doi.org/10.1371/journal.pmed.1002034

Miniharianti, M., Hijriana, I., Zaman, B., & Munawwarah, K. (2023). Hubungan Pengetahuan Orang Tua Tentang Perkembangan Anak Usia 0-12 Bulan dengan Menggunakan KPSP Di Puskesmas Pidie Jaya [The Relationship Between Parents' Knowledge of Child Development from 0 to 12 Months and the Use of the KPSP at the Pidie Jaya Community Health Center]. *Jurnal Kesehatan Hesti Wira Sakti,* 11(2), 153-158. https://doi.org/10.47794/jkhws.v11i02.45

Nurani, N. W. S., Fitriana, F., Awalunisah, S., & Zuama, S. N. (2025). Exploring the Role of Contextual Learning in Developing the Cognitive Abilities of Children Aged 5–6 Years. *Indonesian Journal of Early Childhood Educational Research (IJECER),* 4(2), 385-394. https://doi.org/10.31958/ijecer.v4i2.15869

Rambe, N. L., & Sebayang, W. B. (2020). Pengaruh Kuesioner Pra Skrining Perkembangan (KPSP) terhadap peningkatan kepatuhan ibu dalam pemantauan perkembangan anak [The Effect of the Developmental Pre-Screening Questionnaire (KPSP) on Improving Maternal Compliance in Monitoring Child Development]. *JHeS (Journal of Health Studies),* 4(1), 79-86.

Rifai, M. R., Qarragita, W. W., Ramdani, H. T., & Sapaat, M. (2025). Penerapan Aplikasi E-Kpsp Sebagai Upaya Peningkatan Deteksi Tumbuh Kembang Anak oleh Orang Tua [Implementation of the E-Kpsp App as a Means to Improve Parents' Monitoring of Their Children's Growth and Development]. *Jurnal Ners*, 9(4), 7754–7758. https://doi.org/10.31004/jn.v9i4.50835

Rofi'ah, A., Islami, I., & Nisak, A. Z. (2025). Hubungan kepatuhan ibu dalam pemantauan perkembangan anak usia 5-6 tahun dengan hasil kuesioner pra skrining perkembangan (KPSP) [The relationship between maternal compliance in monitoring the development of children aged 5–6 years and the results of the developmental prescreening questionnaire (KPSP)]. *Jurnal Ilmu Keperawatan dan Kebidanan,* 16(2), 306-313. https://doi.org/10.26751/jikk.v16i2.2991

Yulianis, N., Maswar, R., & Dahliana, D. (2025). Evaluation of Early Childhood Physical-Motor Development in the Perspective of Child Development Achievement Standards. *Bunayya: Journal of Islamic Early Childhood Education,* 1(1), 7-14. Retrieved from https://e-journal.stai-ydi.ac.id/index.php/bujiced/article/view/217

Zamzami, Z., Wahyuni, S., & Reswita, R. (2025). Enhancing Early Childhood Learning Quality: A Qualitative Study on Teachers' Strategies and Pedagogical Approaches in Indonesian Preschools. *Al-Ishlah: Jurnal Pendidikan,* 17(1), 858-869. https://doi.org/10.35445/alishlah.v17i1.7219