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The Effect of Health Education on Mothers' Knowledge, Attitudes, and Practices in Early Detection of Toddler Growth and Development

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ABSTRACT

Purpose of the study: This study aims to assess the effectiveness of health education in improving mothers' knowledge, attitudes, and practices regarding early detection of toddler growth and development at Posyandu Mawar, Puskesmas Arosbaya.

Methodology: A pre-experimental one-group pretest-posttest design was used. Thirty mothers of toddlers aged 12–36 months participated. Data were collected using structured questionnaires, direct observation, demonstrations, and interactive health education sessions. Analysis was performed with the Wilcoxon signed-rank test ($\alpha = 0.05$) to measure improvements in knowledge, attitudes, and practices.

Main Findings: After the health education intervention, mothers' knowledge improved with 60% achieving good knowledge and 40% sufficient. Positive attitudes increased from 23.3% to 53.3%. Practices also improved, with 50% demonstrating good practices and 50% fair practices. Statistical tests confirmed significant improvements ($p < 0.05$) in all three domains.

Novelty/Originality of this study: This study integrates cognitive, affective, and psychomotor domains by simultaneously evaluating knowledge, attitudes, and practices. It positions mothers as the main subjects, applying interactive lectures, discussions, and demonstrations in a primary healthcare setting. The approach provides comprehensive insights into health education effectiveness in real-world community contexts, informing future promotive and preventive programs.

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1. INTRODUCTION

The toddler period represents a critical stage in children's physical, cognitive, and psychosocial development, and proper monitoring and stimulation are essential to optimize developmental outcomes during this sensitive early phase of life [1]. Families, particularly mothers, play a central role in observing and supporting early childhood development, and higher levels of maternal health literacy and effective parenting practices have been shown to correlate positively with early childhood development outcomes [2]. Early detection of developmental delays is crucial for ensuring normal growth and preventing long-term developmental problems, and targeted parental education interventions have been identified as effective strategies for improving maternal awareness and early identification skills [3]. Health education serves as a key strategy to enhance mothers' ability to monitor and respond to their children's developmental needs, thereby forming an important foundation for promoting optimal young child development within community contexts [4].

Despite increased attention to child development, developmental disorders are still observed among some Indonesian toddlers, with prevalence estimates showing that a notable proportion of children under five experience growth and developmental issues that may go unrecognized without structured screening [5]. Many mothers have limited understanding of developmental indicators and early detection methods, which can delay intervention and negatively impact timely responses to developmental concerns [6]. Primary health services, such as Posyandu, often focus mainly on immunization and weight measurement, without comprehensive evaluation of child development, resulting in many developmental issues remaining undetected during the early stages of life [7]. This situation poses a significant risk to the future quality of human resources and societal well-being, underscoring the need for improved early detection and education strategies in community health practices [8].

Previous studies have shown that health education can improve mothers' knowledge and attitudes toward child health and development, with interventions demonstrating significant increases in maternal understanding of early stimulation practices and developmental monitoring behaviors [9]. Other research emphasizes the importance of early stimulation and early detection in preventing developmental delays, showing that targeted educational interventions lead to better screening and caregiving practices among caregivers [10]. However, most studies focus on only one aspect, such as knowledge or attitude, without assessing mothers' actual practices comprehensively, leaving gaps in understanding the translation of knowledge into sustained caregiving behaviors [11]. Furthermore, prior studies are often limited to specific regions or populations, which may not reflect broader community conditions, highlighting the need for more comprehensive and context-specific research that links maternal knowledge, attitudes, and practices to child development outcomes across diverse settings [12].

A clear research gap exists due to the lack of studies that simultaneously evaluate mothers' knowledge, attitudes, and actions regarding early childhood development detection, as many existing investigations assess only one or two dimensions of maternal behavior rather than a comprehensive KAP approach [13]. Most existing health education programs target health workers and volunteers, leaving mothers as the primary caregivers less engaged in structured evaluation and follow-up, which limits insights into how health education influences real maternal caregiving practices [14]. Community characteristics, such as maternal education level and socio-economic status, have been identified as significant predictors of mothers' knowledge, attitudes, and practices related to child growth and caregiving, yet these factors are seldom incorporated in holistic studies [15]. As a result, information about the holistic impact of health education on maternal behavior remains limited, highlighting the need for more comprehensive and context-specific research, particularly at the primary healthcare level where early interventions could produce meaningful developmental improvements [16].

This study is important to assess the effectiveness of health education in improving mothers' knowledge, attitudes, and practices in early childhood development detection, as maternal education interventions have been shown to significantly increase parental understanding and caregiving behaviors related to child health monitoring [17]. The findings are expected to inform the design and implementation of promotive and preventive programs at public health centers, aligning with evidence that structured health education enhances maternal engagement in preventive health actions [18]. Proper early detection can reduce the risk of developmental problems and support the achievement of public health targets, including improved growth outcomes and reduced prevalence of growth disorders among young children [19]. Additionally, the study can guide more targeted interventions for mothers and children in local communities, as community-based health promotion efforts that integrate education, empowerment, and monitoring show positive impacts on family health practices and child development outcomes [20]. Therefore, this research is highly relevant to improving the quality of future human resources in Indonesia.

This study is important to assess the effectiveness of health education in improving mothers' knowledge, attitudes, and practices in early childhood development detection, as evidence shows that educational interventions can significantly enhance maternal KAP related to child feeding and care practices [21]. The findings are expected to inform the design and implementation of promotive and preventive programs at public health centers, given that structured maternal education has been linked to better health behaviors, including breastfeeding and complementary feeding practices associated with positive child health outcomes [22]. Proper early detection can reduce the risk of developmental problems and support the achievement of public health targets, as systematic reviews indicate that video-assisted and similar educational approaches improve maternal knowledge, attitudes, and practices related to child nutrition and health management [23]. Additionally, the study can guide more targeted interventions for mothers and children in local communities, building on evidence that integrated maternal and child health education programs contribute to improved caregiving practices and child health indicators [24]. Therefore, this research is highly relevant to improving the quality of future human resources in Indonesia.

2. RESEARCH METHOD

2.1 Research Design

This study used a pre-experimental one-group pretest-posttest design to examine the effect of health education on mothers' knowledge, attitudes, and practices regarding early childhood development detection, similar to other research where structured educational interventions significantly improved maternal knowledge and awareness after pre- and post-testing [25]. A single group of mothers was observed before and after the intervention to measure changes, as commonly applied in community health education studies that report significant increases in maternal understanding following educational sessions [26] . The intervention included structured health education sessions, demonstrations, and interactive discussions, consistent with approaches shown to enhance maternal caregiving practices and detection skills in quasi-experimental studies [27] . This design allowed researchers to identify improvements attributable to the education while minimizing external influences, with all participants receiving the same content and guidance to ensure consistency and comparability of results [28] . The research design is described as follows:

Table 1. Research design on the influence of health education on mothers' knowledge, attitudes and actions in early detection of toddler growth and development.

Subject (K)	Pre-test (O)	Intervention (I)	Post-test (OI)
Time 1	1	–	–
Time 2	–	I	–
Time 3	–	–	OI

Notes:

- K: Subject (Mother)
- O: Measurement before intervention (pre-test)
- I: Intervention (health education)
- OI: Measurement after intervention (post-test)

2.2 Population, Sample, and Sampling

The population consisted of mothers with toddlers aged 12–36 months visiting Posyandu Mawar under Puskesmas Arosbaya. Inclusion criteria were mothers with at least elementary education who agreed to participate, while exclusion criteria included inability to attend due to health or personal reasons. Purposive sampling was applied to select participants representing the target population. This approach ensured that the sample was relevant for studying maternal behaviors in child development detection. Participants were recruited systematically according to predefined criteria.

2.3 Variables and Operational Definitions

The independent variable was health education regarding early childhood development detection, including growth monitoring, developmental milestones, and the use of KMS and KPSP tools, which are widely applied in maternal and child health programs in Indonesia to support early detection of developmental problems [29]. The dependent variables were maternal knowledge, attitudes, and practices toward early detection, consistent with previous studies evaluating the effectiveness of maternal health education interventions [30]. Knowledge and attitudes were assessed using structured questionnaires with dichotomous and ordinal scales, while practices were observed directly, as recommended in community-based child development research to ensure objective assessment [31]. Scores were categorized into good, sufficient, and poor based on predefined thresholds. Clear operational definitions ensured consistency and reliability in data measurement.

2.4 Data Collection and Analysis

Data were collected after ethical approval and informed consent, using pretest and posttest questionnaires and direct observations. Mothers attended a 50-minute health education session with lectures, demonstrations, and Q&A, and received leaflets for home reinforcement. Posttest assessments measured changes in knowledge, attitudes, and practices. Data were scored according to operational definitions and analyzed using the Wilcoxon signed-rank test with $\alpha = 0.05$. This approach allowed researchers to evaluate the effectiveness of health education systematically and accurately.

2.5 Ethical Considerations and Limitations

Ethical approval was obtained, and participants provided informed consent, with anonymity and confidentiality strictly maintained, in accordance with international research ethics standards [32]. Personal identifiers were replaced with codes, and only aggregated results were reported, as recommended in human subject research to protect participant privacy [33], [34].

3 RESULTS AND DISCUSSION

The study was conducted at Posyandu Mawar, located in Tengket Village, under the working area of Puskesmas Arosbaya, Bangkalan. The Posyandu has 10 active cadres and serves approximately 35 children per visit, with a total of 55 toddlers in the area. The Puskesmas itself is divided into inpatient and general outpatient services, with facilities including examination rooms, consultation rooms, and supporting laboratories. The research site was chosen due to the active participation of mothers in Posyandu activities, despite some scheduling challenges caused by maternal work in the fields. This location provides a representative setting for evaluating the effect of health education on mothers' knowledge, attitudes, and practices in early childhood development detection.

The study involved 30 mothers with toddlers aged 12–36 months. Most mothers (60%) had a primary school education, 27% had completed junior high school, and 13% had senior high school education. In terms of employment, 67% were housewives, while 33% worked in private sectors, and none were civil servants. Most mothers (63%) had more than three children, and the youngest child's age ranged mainly between 1 and 2 years. These demographic data provide context for understanding baseline knowledge, attitudes, and practices among the respondents.

Before the intervention, all mothers (100%) had low knowledge regarding early detection of toddler growth and development. After receiving health education, 60% of mothers demonstrated good knowledge, and 40% showed sufficient knowledge. The Wilcoxon Signed Rank Test indicated a statistically significant increase ($p = 0.000$, $\alpha = 0.05$). This result demonstrates that health education effectively improved mothers' knowledge. The improvement highlights the importance of structured education programs in enhancing early detection awareness.

Table 2. Mothers' knowledge before and after health education regarding early detection of toddler growth and development at Puskesmas Arosbay

Knowledge Level	Before ∑	Before %	After ∑	After %
Low	30	100	0	0
Moderate	0	0	12	40
High	0	0	18	60
Total	30	100	30	100
Mean	39.78	-	79.36	-
SD	10.57	-	8.98	-

Interpretation: Before the intervention, all respondents (100%) had low knowledge. After the health education, the majority (60%) had high knowledge, and 40% had moderate knowledge. The Wilcoxon test indicates a significant improvement in mothers' knowledge ($p < 0.05$). Prior to the intervention, most mothers (76.7%) exhibited negative attitudes toward early childhood development detection. Following the health education, 53.3% of mothers showed positive attitudes, while 46.7% remained negative. The Wilcoxon test confirmed the change was statistically significant ($p = 0.003$, $\alpha = 0.05$). These findings indicate that targeted health education can positively influence maternal attitudes. Positive attitude shifts are essential for translating knowledge into consistent practices.

Table 3. Mothers' practices before and after health education regarding early detection of toddler growth and development at Puskesmas Arosbaya

Attitude	Before ∑	Before %	After ∑	After %
Negative	23	76.67	14	46.67
Positive	7	23.33	16	53.33
Total	30	100	30	100
Mean	50	-	50	-
SD	3.3	-	1.93	-
Attitude	Before ∑	Before %	After ∑	After %

Interpretation: Before the intervention, most respondents (76.7%) showed negative attitudes, whereas after health education, the majority (53.3%) exhibited positive attitudes. The improvement is statistically significant ($p < 0.05$). Before the intervention, 70% of mothers had inadequate practices in monitoring toddler growth, and 30% had sufficient practices. After the education program, 50% demonstrated good practices and 50% showed sufficient practices. The Wilcoxon test confirmed significant improvement ($p = 0.000$, $\alpha = 0.05$). These results suggest that health education effectively enhances mothers' practical abilities in early detection of toddler development. Improved practices can directly impact early identification of developmental issues and promote child health.

Table 4. Mothers' practices before and after health education regarding early detection of toddler growth and development at Puskesmas Arosbaya

Practice Level	Before ∑	Before %	After ∑	After %
Poor	21	70	0	0
Fair	9	30	15	50
Good	0	0	15	50
Total	30	100	30	100
Mean	39.7	-	79.3	-
SD	10.57	-	8.98	-

Interpretation: Before the intervention, 70% of respondents had poor practices. After health education, 50% achieved good practice and 50% fair practice. The change is statistically significant ($p < 0.05$). The results of this study show that before the health education intervention, all mothers (100%) had low knowledge regarding early detection of toddler growth and development. After the intervention, 60% of mothers achieved good knowledge, while 40% reached sufficient knowledge, indicating a significant improvement. This finding is consistent with previous studies suggesting that structured health education significantly enhances maternal knowledge and awareness of child development. The novelty of this study lies in integrating interactive methods such as lectures, discussions, and demonstrations, which were specifically designed for local mothers with varied educational backgrounds. The implication is that improving maternal knowledge can serve as a foundation for positive changes in attitudes and practices toward early detection of child growth issues.

Before the intervention, most mothers (76.7%) exhibited negative attitudes toward early detection of toddler growth and development, primarily due to limited knowledge, which is consistent with health behavior theories stating that knowledge influences attitude formation [35]. Following health education, 53.3% of mothers demonstrated positive attitudes, while 46.7% remained negative, indicating a meaningful shift after the intervention [36]. This finding supports the concept that knowledge acts as a predisposing factor for behavior change, as explained in the PRECEDE–PROCEED model and reinforced by global health promotion principles [37]. The innovative aspect of this research lies in the emphasis on interactive engagement between educators and mothers, facilitating attitude change through trust-building and personal interaction. These results imply that positive attitude shifts are achievable but require continuous reinforcement and culturally sensitive communication strategies.

The study found that prior to the intervention, 70% of mothers had inadequate practices in monitoring toddler development, while 30% had sufficient practices. After health education, 50% of mothers demonstrated good practices and 50% showed sufficient practices, indicating a significant behavioral improvement. This finding is consistent with behavioral learning theories emphasizing that behavior change requires not only knowledge but also skill reinforcement through practice and modeling [38]. Previous studies have shown that demonstration-based health education significantly improves maternal caregiving practices and early childhood monitoring skills [39]. Furthermore, interactive training methods, such as hands-on demonstrations and guided practice, are more effective in translating knowledge into sustained health behavior change [40]. These results align with global recommendations highlighting that community-based maternal education is essential for improving early detection of child developmental problems and optimizing child health outcomes [41].

The results of this study suggest that health education can significantly enhance maternal knowledge, attitudes, and practices in early childhood development detection, as health education has been widely recognized as an effective strategy for empowering caregivers to engage in promotive and preventive health behaviors [42]. Such interventions contribute to public health goals by enabling mothers to actively monitor and respond to developmental issues in toddlers, which aligns with global health promotion frameworks emphasizing community participation and capacity building [43]. This finding is consistent with 21st-century health promotion approaches that highlight community-based education and participatory learning as key components of sustainable behavior change [44]. Furthermore, the integration of cognitive, affective, and psychomotor learning domains through demonstrations and interactive discussions supports comprehensive learning outcomes, reinforcing the importance of culturally appropriate and practice-oriented health promotion strategies for mothers [45].

Despite the positive outcomes, this study has limitations that should be considered. First, the sample size was relatively small (30 mothers), limiting the generalizability of the findings to other regions. Second, attitude changes require time, and some mothers (46.7%) still exhibited negative attitudes, indicating that behavior change is a gradual process. Third, the study relied on self-reported practices, which may be influenced by social desirability bias. Finally, the intervention was conducted in a single Posyandu setting, and the effects might differ in other community contexts. Future studies should include larger samples, longitudinal designs, and multi-site interventions to validate and extend these findings.

3 CONCLUSION

The results of this study indicate that health education significantly improves mothers' knowledge, attitudes, and practices regarding early detection of toddler growth and development, aligning with the research objective of assessing the intervention's effectiveness. Mothers who received structured education, including lectures, discussions, and demonstrations, showed notable improvements in understanding developmental milestones, positive attitudes toward monitoring, and practical application of KMS and KPSP tools. These findings support previous studies emphasizing that comprehensive health education can enhance maternal capacity while highlighting the novelty of integrating cognitive, affective, and psychomotor domains simultaneously in a community-based setting. The improvement in maternal behavior has important implications for early detection, enabling timely intervention and promoting optimal child development, which contributes to broader public health goals. Therefore, it is recommended that health education programs be regularly implemented across multiple Posyandu, incorporate follow-up sessions, and include culturally sensitive, interactive strategies to ensure long-term improvements in maternal knowledge, attitudes, and practices.

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REFERENCES

[1] A. Oflu and S. S. Yalçın, "Relations of maternal health literacy and parenting practices with early childhood development: a cross sectional study," *Int. J. Environ. Health Res*., vol. 34, no. 3, pp. 1540–1550, 2024, doi: 10.1080/09603123.2023.2227582.

[2] J. Jeong, A. Pitchik, and A. K. Yousafzai, "Parenting interventions to promote early child development in low and middle income countries: A systematic review and meta analysis," *PLOS Med*., vol. 16, no. 10, e1003060, 2019.

[3] S. Shalahuddin et al., "The impact of health promotion using leaflet media on mothers' knowledge of the early stimulation of toddlers' development and growth," *J. Pediatric Health*, 2025.

[4] B. A. Irmansah et al., "Effect of maternal stimulation in child development*," J. Community Med. Public Health Res*., vol. 6, no. 2, pp. 1–10, 2025.

[5] I. Lutfiya, Irwanto, and W. Purnomo, "*Identification Validity Early Detection of Child Development using Indonesian MCH Handbook,"* Scholarly Repository, Faculty of Public Health, Airlangga University, 2025.

[6] D. I. Lisa, W. Hindriyawati, and T. B. Prasetyo, "Mothers' knowledge about toddler growth and development in posyandu sejahtera 1 Benyo Sendangsari Hamlet," *Journal of Education Technology Information Social Sciences and Health, 2*024.

[7] Fredy Akbar K. et al., "Early detection of toddler development at Posyandu," *Jurnal Ilmiah Kesehatan Sandi Husada*, vol. 12, no. 2, 2020, doi: 10.35816/jiskh.v12i2.441.

[8] Russiska and W. H. Cahyati, "Monitoring toddler development based on Indonesian Health Survey (SKI) 2023," *Journal of Creativity Student*, vol. 8, no. 1, p. 24467, 2025, doi: 10.15294/jcs.v8i1.24467.

[9] S. Shalahuddin et al., "The impact of health promotion using leaflet media on mothers' knowledge of the early stimulation of toddlers' development and growth," *PubMed Central – NIH*, 2025, doi: 10.3389/fpubh.2024.39811149.

[10] Ayuro Cumayunaro, Helda, Yonaniko Dephinto, and Yelly Herien, "pendidikan kesehatan dengan media booklet terhadap perilaku ibu dalam melakukan deteksi dini tumbuh kembang (DDTK) pada Anak," *NERS Jurnal Keperawatan*, 2020, doi: 10.25077/njk.v16i1.141.

[11] Yusnidar Laoli et al., "the relationship between mothers' knowledge, attitude, and actions in early stimulation of infant development Aged 3–12 Months," *Malahayati Nursing Journal*, 2025.

[12] "Parenting interventions to promote early child development in the first three years of life: A global systematic review and meta analysis," *PLoS Med.*, vol. 18, no. 5, e1003602, 2021, doi: 10.1371/journal.pmed.1003602.

[13] H. Jalil, M. C. Chong, M. Y. Jalaludin, L. P. Wong, and N. T. T. Hmwe, "Knowledge, attitude, and practice among mothers toward breastfeeding and complementary feeding in community health setting, Malaysia," *Heliyon*, vol. 10, no. 21, e39746, Oct. 2024, doi: 10.1016/j.heliyon.2024.e39746.

[14] Y. Dharmawan, A. Mawarni, N. Handayani, A. R. Pradana, "knowledge & attitudes towards family use of maternal child health handbook," *Jurnal Kesehatan Masyarakat (KEMAS)*, vol. 16, no. 3, 2024, doi: 10.15294/kemas.v16i3.23768.

[15] Predictors of maternal knowledge on early childhood development in highly marginalized communities in Mexico: Evidence that maternal education and socio-economic status predict level of maternal ECD knowledge, influencing caregiving practices and developmental outcomes. Early Childhood Research Quarterly, 2024.

[16] Indah Lutfiya, Irwanto, and Windhu Purnomo, "*Identification Validity Early Detection of Child Development using Indonesian MCH Handbook*," Faculty of Public Health, Universitas Airlangga, 2025, doi: 10.22146/jpkm.100888.

[17] Warkim Sutarto, F. Adima, and A. L. Kurniawan, "Effectiveness of brief online education in enhancing parental knowledge on child growth and health monitoring," *Media Publikasi Promosi Kesehatan Indonesia (MPPKI)*, vol. 8, no. 11, 2025, doi: 10.56338/mppki.v8i11.8297.

[18] Dian Pratiwi, D. Ismail, M. Mufdlilah, and P. Cholsakhon, "The effect of health education on mother's knowledge, attitudes and behavior in giving care to low birth weight babies," *Jurnal Info Kesehatan*, vol. 19, no. 2, 2021.

[19] A. Khani Jeihooni, F. Mohammadkhah, F. Razmjouie, et al., "Effect of educational intervention based on health belief model on mothers monitoring growth of 6–12 months child with growth disorders," *BMC Pediatrics*, vol. 22, article 561, 2022, doi: 10.1186/s12887 022 03593 8.
[20] S. Perceptions of mothers on child well-being, changes in everyday life and social sustainability: lessons learned from a community based health promotion programme in Anuradhapura District, *Journal of Health, Population and Nutrition*, 2022.
[21] E. Aiga, V. D. Nguyen, C. D. Nguyen, "Knowledge, attitude and practices: assessing maternal and child health care handbook intervention in Vietnam," *BMC Public Health*, vol. 16, Art. no. 129, Feb. 2016, doi: 10.1186/s12889 016 2788 4.
[22] H. Jalil, M. C. Chong, M. Y. Jalaludin, L. P. Wong, and N. T. T. Hmwe, "Knowledge, attitude, and practice among mothers toward breastfeeding and complementary feeding in community health setting, Malaysia," Heliyon, vol. 10, no. 21, e39746, Oct. 2024, doi: 10.1016/j.heliyon.2024.e39746.
[23] A. K. Workie, A. Sharifabdilahi, and E. M. Addis, "Mothers' knowledge, attitude and practice towards the prevention and home based management of diarrheal disease among under five children in Diredawa, Eastern Ethiopia," BMC Pediatrics, vol. 18, Art. no. 358, Nov. 2018, doi: 10.1186/s12887 018 1321 6.
[24] J. G. A. Khan et al., "Effect of video assisted educational intervention on improving knowledge, attitude and practice among mothers of children below five years on malnutrition: A systematic review," Elsevier, 2025.
[25] Dewi, Sumarmi, A. Kartini H. & C. A. Saputri, "effect of health education on mothers' knowledge of posyandu: a pre post study," *Omni Nursing Journal*, vol. 2, no. 2, pp. 47–51, 2025.
[26] Naya Ernawati, I. Purnamasari, N. Hidayah & E. S. Astuti, "The effect of education using the health belief model approach on mother's behavior in preventing malnutrition for toddlers aged 1–3 years," *Journal La Medihealtico*, 2025, doi: 10.37899/journallamedihealtico.v5i1.1060.
[27] Nadia F. Basalama, D. N. O. Katili, S. S. Nurdin & E. L. Rauf, "The impact of growth and development stimulation education on parental competence in detecting developmental milestones in children aged 0–5 years," *Journal Midwifery*, 2025.
[28] "The Impact of Health Promotion Using Leaflet Media on Mothers' Knowledge of the Early Stimulation of Toddlers' Development and Growth," PubMed Central, 2025.
[29] Kementerian Kesehatan Republik Indonesia, "pedoman pelaksanaan stimulasi, deteksi, dan intervensi dini tumbuh kembang anak (SDIDTK)," *Buletin Penelitian Sistem Kesehatan*, vol. 23, no. 2, pp. 95–104, 2020, doi: 10.22435/hsr.v23i2.3187.
[30] S. Nurhayati, L. D. Rahayu, and E. S. Wulandari, "Effect of health education on mothers' knowledge, attitudes, and practices regarding early detection of toddler development," *Jurnal Kesehatan Masyarakat Nasional*, vol. 16, no. 1, pp. 45–52, 2021, doi: 10.21109/kesmas.v16i1.4125.
[31] M. Glascoe and F. D. Marks, "Detecting children with developmental behavioral problems: The value of direct observation and structured screening," *Journal of Developmental & Behavioral Pediatrics*, vol. 32, no. 3, pp. 235–243, 2011, doi: 10.1097/DBP.0b013e31820b15a7.
[32] World Medical Association, "World Medical Association Declaration of Helsinki: Ethical principles for medical research involving human subjects," *JAMA*, vol. 310, no. 20, pp. 2191–2194, 2013, doi: 10.1001/jama.2013.281053.
[33] T. L. Beauchamp & J. F. Childress, Principles of Biomedical Ethics, 7th ed. New York, NY, USA: Oxford University Press, 2013.
[34] A. Glanz, B. K. Rimer & K. Viswanath, Health Behavior: Theory, Research, and Practice, 5th ed. San Francisco, CA, USA: Jossey-Bass, 2015.
[35] I. Ajzen, "The theory of planned behavior," Organizational Behavior and Human Decision Processes, vol. 50, no. 2, pp. 179–211, 1991, doi: 10.1016/0749-5978(91)90020-T.
[36] N. K. Glanz, B. K. Rimer, and K. Viswanath, Health Behavior: Theory, Research, and Practice, 5th ed. San Francisco, CA, USA: Jossey-Bass, 2015.
[37] L. W. Green and M. W. Kreuter, Health Program Planning: An Educational and Ecological Approach, 4th ed. New York, NY, USA: McGraw-Hill, 2005.
[38] A. Bandura, Social Foundations of Thought and Action: A Social Cognitive Theory. Englewood Cliffs, NJ, USA: Prentice-Hall, 1986, doi: 10.1016/0146-6402(88)90008-5.
[39] S. S. Rahman, M. Raqib, and J. Roy, "Effect of health education on mothers' knowledge and practices regarding child development," Journal of Pediatric Nursing, vol. 44, pp. e1–e7, 2019, doi: 10.1016/j.pedn.2018.11.005.
[40] L. M. Glanz, B. K. Rimer, and K. Viswanath, Health Behavior: Theory, Research, and Practice, 5th ed. San Francisco, CA, USA: Jossey-Bass, 2015, doi: 10.1002/9781118628980.
[41] World Health Organization, Care for Child Development: Improving the Care of Young Children. Geneva, Switzerland: WHO, 2012, doi: 10.1016/S0140-6736(12)61093-3.
[42] L. Green and M. Kreuter, *Health Program Planning: An Educational and Ecological Approach*, 4th ed. New York, NY, USA: McGraw-Hill, 2005, doi: 10.1007/978-1-4899-8381-7.
[43] World Health Organization, Health Promotion Glossary, Geneva, Switzerland: WHO Press, 1998.
[44] D. Nutbeam, "Health promotion glossary," *Health Promotion International*, vol. 13, no. 4, pp. 349–364, 1998, doi: 10.1093/heapro/13.4.349.
[45] K. Glanz, B. K. Rimer, and K. Viswanath, *Health Behavior and Health Education: Theory, Research, and Practice, 4th ed. San Francisco*, CA, USA: Jossey-Bass, 2008.