

Laporan Penelitian



**DEVELOPMENT OF AN ARTIFICIAL INTELLIGENCE-INTEGRATED
PREVENTIVE COMMUNICATION COUNSELING MODEL FOR THE
PREVENTION OF SEXUAL VIOLENCE IN EARLY CHILDHOOD IN
ACEH**

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**LEMBAGA PENELITIAN DAN PENGABDIAN KEPADA MASYARAKAT
UNIVERSITAS BINA BANGSA GETSEMPENA
BANDA ACEH
2026**

KEPADA:

**LEMBAGA PENELITIAN DAN PENGABDIAN KEPADA MASYARAKAT
UNIVERSITAS BINA BANGSA GETSEMPENA
BANDA ACEH**

SURAT TUGAS

No. 050 /131013/RKT.LPPM/ST.1/VI/2026

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Untuk Melaksanakan Kegiatan Tridharma Perguruan Tinggi Bidang **Penelitian** dengan rincian kegiatan :

- Judul : Development of an Artificial Intelligence-Integrated Preventive Communication Counseling Model for the Prevention of Sexual Violence in Early Childhood in Aceh
- Kegiatan : TKIT Al-Fatih
- Lokasi : TKIT Al-Fatih
- Pelaksanaan : TKIT Al-Fatih
- Waktu : Senin, 15 Juli 2026 s.d Jumat, 31 Juli 2026
- pelaksanaan : TKIT Al-Fatih
- Keterkaitan dengan SDGs : Penelitian ini mendukung pencapaian SDGs 3: Kehidupan Sehat dan Sejahtera, dan Pendidikan Berkualitas melalui Development of an Artificial Intelligence-Integrated Preventive Communication Counseling Model for the Prevention of Sexual Violence in Early Childhood in Aceh, melalui pengembangan model konseling komunikasi preventif berbasis AI, kegiatan ini berupaya meningkatkan perlindungan anak usia dini dari risiko kekerasan seksual yang dapat berdampak pada kesehatan fisik, psikologis, dan kesejahteraan anak. Selain itu, model yang dikembangkan mendukung terciptanya lingkungan pendidikan yang aman, nyaman, dan inklusif dengan meningkatkan pemahaman serta keterampilan guru dan orang tua dalam melakukan pencegahan kekerasan seksual, dengan demikian, kegiatan ini berkontribusi pada peningkatan kualitas hidup dan kesehatan anak sekaligus mendukung penyelenggaraan pendidikan yang berkualitas dan berorientasi pada perlindungan hak-hak anak.
- Nama Mitra : TKIT Al-Fatih

Deskripsi Kegiatan

Judul Kegiatan	: Development of an Artificial Intelligence-Integrated Preventive Communication Counseling Model for the Prevention of Sexual Violence in Early Childhood in Aceh
Ketua Pelaksana	: Helnita, S.Pd., M.Pd
Anggota Dosen	: 2 orang
Anggota Mahasiswa	: 5 orang
Luaran yang direncanakan	: Artikel Sinta 3
Integrasi Matakuliah	: Comprehensive Sexuality Education, pada pertemuan 6
Mitra Kegiatan	: TKIT Al-Fatih
Bentuk Mitra	: Sekolah
Dasar Kerja Sama	: MoU
Nomor Dokumen Kerja Sama	: 0496/131013/RKT/PKS/X/2025
Bentuk Implementasi Kerja Sama:	: Penelitian

Keterkaitan dengan SDGs

No.	Tujuan SDGs	Bentuk Kontribusi
1.	SDGs 4 (Pendidikan berkualitas)	Penelitian ini mendukung pencapaian SDGs 3: Kehidupan Sehat dan Sejahtera (Good Health and Well-being), dan Pendidikan Berkualitas (Quality Education) melalui Development of an Artificial Intelligence-Integrated Preventive Communication Counseling Model for the Prevention of Sexual Violence in Early Childhood in Aceh, melalui pengembangan model konseling komunikasi preventif berbasis AI, kegiatan ini berupaya meningkatkan perlindungan anak usia dini dari risiko kekerasan seksual yang dapat berdampak pada kesehatan fisik, psikologis, dan kesejahteraan anak. Selain itu, model yang dikembangkan mendukung terciptanya lingkungan pendidikan yang aman, nyaman, dan inklusif dengan meningkatkan pemahaman serta keterampilan guru dan orang tua dalam melakukan pencegahan kekerasan seksual, dengan demikian, kegiatan ini berkontribusi pada peningkatan kualitas hidup dan kesehatan anak sekaligus mendukung penyelenggaraan pendidikan yang berkualitas dan berorientasi pada perlindungan hak-hak anak.

Agenda/Rundown Rincian Pelaksanaan Kegiatan

No	Nama Kegiatan	Jadwal	Waktu	Pelaksana
1	Koordinasi awal, studi pendahuluan, analisis kebutuhan, dan identifikasi permasalahan terkait pencegahan kekerasan seksual pada anak usia dini di Aceh	Rabu, 15 Juli 2026	09.00–12.00	Ketua: Helnita, S.Pd., M.Pd Anggota: 1. Raudha Meutia, M.Ed 2. Putri Fakhrina Sari, M.Pd 3. Maisari 4. Rama 5. Putri Nur Khasanah 6. Anti Munira 7. A'rifa Yasira

	kekerasan seksual pada anak usia dini			4. Rama 5. Putri Nur Khasanah 6. Anti Munira 7. A'rifa Yasira
4.	Implementasi dan uji coba model konseling komunikasi preventif terintegrasi AI pada lembaga PAUD serta observasi efektivitas model dalam meningkatkan kesadaran pencegahan kekerasan seksual	Senin, 27 Juli 2026	09.00–12.00	Ketua: Helnita, S.Pd., M.Pd Anggota: 1. Raudha Meutia, M.Ed 2. Putri Fakhрина Sari, M.Pd 3. Maisari 4. Rama 5. Putri Nur Khasanah 6. Anti Munira 7. A'rifa Yasira
5.	Evaluasi hasil implementasi, refleksi kegiatan, penyempurnaan model konseling komunikasi preventif berbasis AI, dan penyusunan laporan akhir kegiatan	Jumat, 31 Juli 2026	09.00–12.00	Ketua: Helnita, S.Pd., M.Pd Anggota: 1. Raudha Meutia, M.Ed 2. Putri Fakhрина Sari, M.Pd 3. Maisari 4. Rama 5. Putri Nur Khasanah 6. Anti Munira 7. A'rifa Yasira

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1. Judul	: Development of an Artificial Intelligence-Integrated Preventive Communication Counseling Model for the Prevention of Sexual Violence in Early Childhood in Aceh
2. Ketua Penelitian a) Nama lengkap dan gelar b) NIDN c) Perguruan Tinggi d) Program Studi	: Helnita, S.Pd., M.Pd : 1319089301 : Universitas Bina Bangsa Getsempena : Pendidikan Guru Pendidikan Anak Usia Dini
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4. Waktu Pelaksanaan	: Senin, 15 Juli 2026 s/d Jumat, 31 Juli 2026
5. Sumber Dana a) Luar Negeri b) Pemerintah/Swasta c) Institusi Internal d) Mandiri	: Rp. - : Rp. : Rp. 25.000.000 : Rp. -
Jumlah	: Rp. 25.000,000

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Artificial Intelligence, Preventive Communication, Counseling Model, Early Childhood, Sexual Violence Prevention, ADDIE Model.

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Abstract

This study aims to develop and evaluate an Artificial Intelligence (AI)-integrated preventive communication-based counseling model for the prevention of sexual violence in early childhood in Aceh, Indonesia. The purpose of this research is to address the increasing cases of sexual violence against children and the limited availability of structured, child-friendly preventive communication models integrated with technology in early childhood education settings. The study seeks to contribute an innovative and contextually relevant counseling model that strengthens children's protective awareness through interactive and developmentally appropriate learning experiences. The research employed a Research and Development (R&D) approach using the ADDIE model (Analysis, Design, Development, Implementation, and Evaluation). Data were collected from Early Childhood Education (ECE) teachers, parents, counselors, and children through observation, interviews, questionnaires, and document analysis. The model was validated by experts and tested through limited-scale implementation, followed by quantitative and qualitative analysis. The results show that 78% of teachers and 82% of parents lacked preventive communication guidelines, while 85% required an interactive and child-friendly model. Expert

validation confirmed the model's high feasibility with an average score of 4.35/5. Pilot testing revealed a significant increase in children's understanding of safe body concepts, with average scores rising from 58.4 to 82.7 and an N-gain of 0.58 (moderate category). Children's ability to identify safe body parts increased from 46% to 81%, while confidence in expressing discomfort increased from 39% to 76%. The study concludes that the AI-integrated preventive communication counseling model is valid, practical, and effective in improving early childhood protective communication skills. It offers a promising innovation for strengthening child protection systems through the integration of counseling services and Artificial Intelligence. Future research is recommended to expand large-scale implementation and examine long-term behavioral impacts.

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Introduction

Sexual violence against early childhood has emerged as a pressing global and national concern. As a grave violation of children's rights, it poses profound and long-lasting impacts on emotional development, behavioral regulation, mental health, and the sustainability of children's educational trajectories. (Aulia et al., 2025; A. A. Rahmania et al., 2023).

In Indonesia, the incidence of such cases continues to rise annually, including in Aceh Province. Although Aceh is widely recognized as a province characterized by strong religious values and deeply rooted cultural traditions, empirical evidence indicates that sexual violence against young children has shown a consistent year-to-year increase. This trend highlights a critical gap between socio-cultural expectations and the realities of child protection practices on the ground. (ANTARA News, 2025). In Aceh, official records indicate that there were 792 cases of child violence in 2023. In 2024, the number reached 656 cases, with sexual violence constituting the dominant form. By October 2025, the reported cases had risen to 967, demonstrating a significant upward trend. (ANTARA News, 2025; Dialeksis.com, n.d.; Seulawah News, 2025).

The high incidence of violence against children underscores that early childhood environments remain insufficiently safe and require comprehensive preventive strategies. Preventive education and effective communication among children, parents, and teachers can enhance children's capacity to recognize, respond to, and refuse potentially harmful situations. Such efforts are crucial for the early prevention of sexual violence and for strengthening children's protective awareness from a young age. (A. Amini et al., 2023).

Alongside rapid technological advancements in the digital era, the utilization of information and communication technologies, including Artificial Intelligence (AI), has become increasingly inseparable from the lives of both children and adults. AI offers significant opportunities to strengthen educational interactions and counseling services. In the context of early childhood education, AI technology holds substantial potential to support learning processes, enhance interactive educational experiences, and provide personalized learning environments tailored to children's individual developmental needs. Previous studies have demonstrated that AI contributes to the promotion of active learning and increases children's engagement in educational activities through interactive media such as chatbots, educational robots, and developmentally appropriate synthetic agents. (Solichah & Shofiah, 2024).

Preventive communication represents a strategic alternative for the prevention of sexual violence in early childhood, particularly when it is delivered in accordance with children's developmental stages. Developmentally appropriate, safe, and structured communication actively involving both teachers and parents can foster protective awareness and strengthen children's capacity to understand personal boundaries, recognize inappropriate behaviors, and seek help when necessary (R. D. Septiani, 2021). In recent years, the presence of AI has demonstrated considerable potential to support counseling services, particularly in delivering interactive and personalized preventive education. Although previous studies have addressed the prevention of child sexual violence and the application of AI in educational settings, the integration of developmentally appropriate sexual violence prevention and AI within a preventive communication-based counseling model remains significantly limited. This gap is especially evident in the context of Aceh, where culturally responsive and technology-integrated preventive frameworks are still underdeveloped.

Based on these considerations, this study focuses on the development of an AI-integrated preventive communication-based counseling model as an innovative strategy for preventing sexual violence against early childhood in Aceh. The study contributes to the advancement of innovative counseling service models by integrating a preventive communication approach with child-friendly Artificial Intelligence tailored to early childhood characteristics and contextual needs. The findings indicate that the developed model is valid, practical, and effective in supporting efforts to prevent sexual violence among young children.

Methods

This study employed a Research and Development (R&D) approach using the ADDIE model to design, develop, and evaluate an Artificial Intelligence (AI)-integrated preventive communication-based counseling model aimed at preventing sexual violence in early childhood. The ADDIE framework-comprising Analysis, Design, Development, Implementation, and Evaluation-has been widely utilized in educational research for the systematic development and validation of instructional and intervention models. (Rustamana et al., 2024), This approach was selected because the primary objective of the study was to develop, test, and produce a valid and effective counseling model, rather than merely analyzing the phenomenon of sexual violence against young children. Therefore, the Research and Development framework was considered the most appropriate methodological choice to generate a practical and empirically validated intervention model.

The study will be conducted in Early Childhood Education (ECE) institutions in Aceh Province, Indonesia, selected on the basis that they have established and actively implemented guidance and counseling services and demonstrate readiness to integrate technological support. The research encompasses instrument development, model implementation, and comprehensive evaluation. The population includes ECE teachers, parents, school counselors, and young children, with participants selected through purposive sampling based on predefined criteria and institutional readiness. The research procedure involves a systematic sequence of needs assessment, model design, expert validation, limited-scale pilot testing, model revision, and evaluation of the model's effectiveness. (Jauhari et al., 2025; Rahayu, 2025). Data were collected through systematic observation, structured interviews, questionnaires, and document analysis.

Data were analyzed using both qualitative and quantitative approaches. Qualitative analysis was employed to comprehensively understand the process of model implementation, while quantitative analysis was conducted to examine measurable changes resulting from the application of the model. Data validity was strengthened through triangulation of sources and data collection techniques to ensure that the developed model is feasible, practical, and aligned with the characteristics of young children in Aceh. The Research and Development (R&D) procedure followed the ADDIE model, and the research flow is presented in the following diagram.

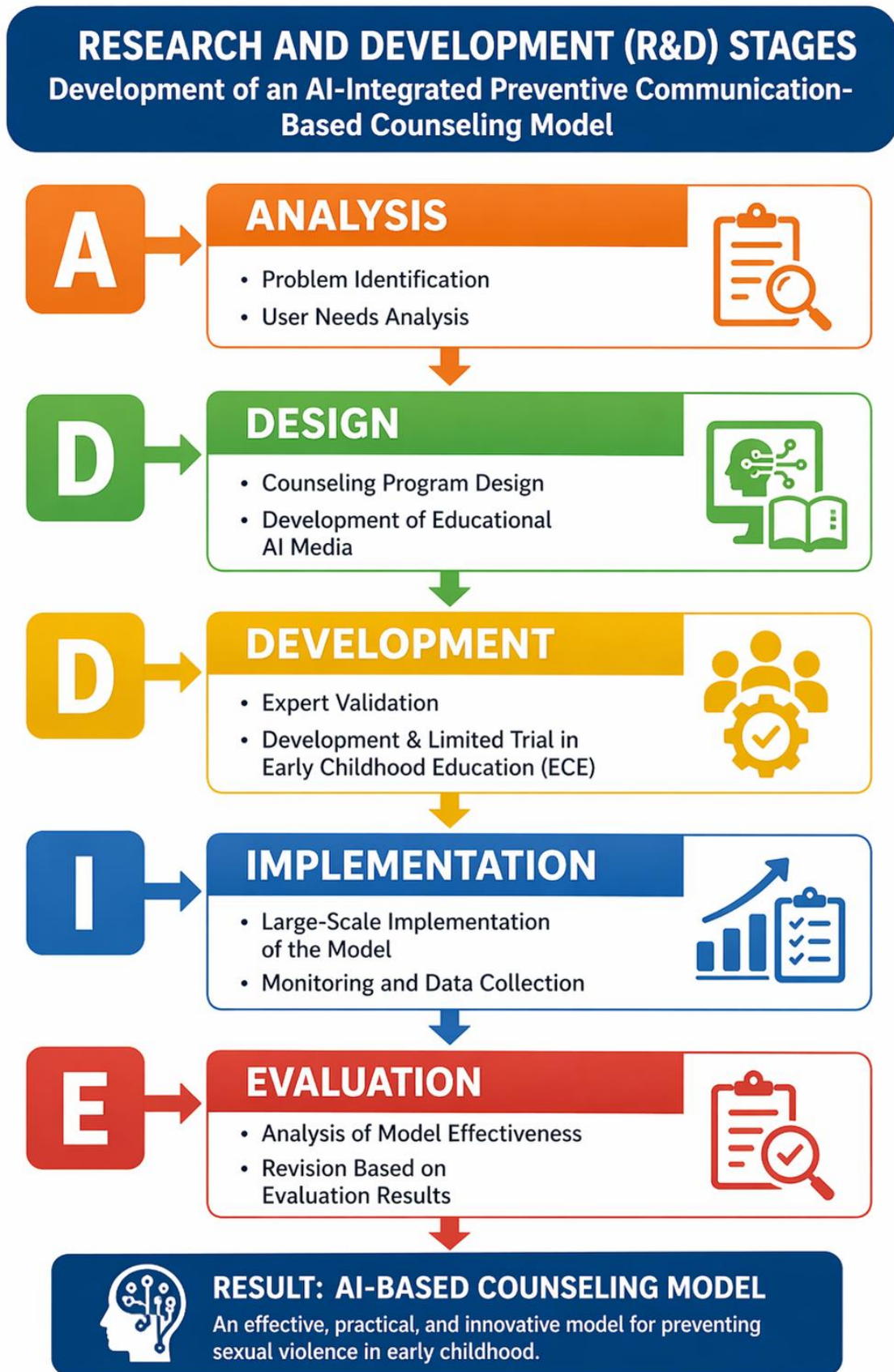


Figure 1. Stages of the ADDIE R&D Model in the Development of an AI-Based Guidance and Counseling Model

Result

This section presents the findings of the research on the development and implementation of a preventive communication-based guidance and counseling model integrated with Artificial Intelligence (AI) in Early Childhood Education (ECE) institutions in Aceh. The results discussed include the needs analysis, model development process, expert validation, limited-scale pilot testing, and interpretation of the effectiveness of the developed model. (Branch, 2023; Sugiyono, 2022).

1.1 Needs Analysis Results

The results of the needs analysis indicate that 78% of Early Childhood Education (ECE) teachers and 82% of parents reported not having specific guidelines for delivering preventive communication related to sexual violence to young children. Furthermore, 85% of respondents expressed the need for a guidance and counseling model that is simple, child-friendly, and supported by interactive media. In addition, 74% of teachers stated that they had never utilized AI-based technology in the implementation of guidance and counseling services. A summary of the needs analysis findings is presented in the following table.

Table 1. Results of the Needs Analysis for the Development of an AI-Integrated Preventive Communication-Based Guidance and Counseling Model

Number	Analyzed Aspects	Respondents	Percentage (%)
1	Do not yet have specific guidelines for preventive communication on sexual violence	Teachers	78
2	Have not yet had specific guidelines for preventive communication on sexual violence.	Parents	82
3	Require a guidance and counseling model that is simple, child-friendly, and interactive.	Teachers & Parents	85
4	Have never utilized AI-based technology in guidance and counseling services.	Teachers	74

These findings are consistent with previous studies indicating that the limited availability of preventive communication guidelines and the underutilization of technology constitute major barriers to efforts in preventing violence against young children dini (M. Amini et al., 2023; F. Rahmania et al., 2023; R. Septiani, 2021). Based on the results of the needs analysis, it is therefore necessary to develop a preventive communication-based guidance and counseling model integrated with Artificial Intelligence (AI).

1.2 Model Development Results

Based on the results of the needs analysis, a preventive communication-based guidance and counseling model integrated with Artificial Intelligence (AI) was developed using the ADDIE framework. The model establishes systematic stages of guidance services, including materials on safe body awareness, personal boundaries, and simple communication exercises, delivered through interactive AI-based media tailored to the developmental characteristics of young children. This approach is consistent with previous research findings indicating that interactive digital media and AI contribute to enhancing children's engagement and improving the effectiveness of educational message delivery in early childhood contexts. (Solichah & Shofiah, 2024; Widiastuti & Hermanto, 2024).

1.3 Expert Validation Results

The results of expert validation indicate that the AI-integrated preventive communication-based guidance and counseling model, developed as an effort to prevent sexual violence among young children in Aceh, achieved an overall feasibility score of 4.35 out of 5, categorized as "highly feasible." In terms of content, the model obtained an average score of 4.40 in terms of language, it achieved an average score of 4.30 and regarding its suitability to the developmental characteristics of young children, it received an average score of 4.36. A recapitulation of the expert validation assessment results is presented in the following table.

Table 2. Expert Validation Results of the AI-Integrated Preventive Communication-Based Guidance and Counseling Model

No	Assessment Aspects	Average Score	Category
1	Content Feasibility	4,40	Highly Feasible
2	Language Feasibility	4,30	Highly Feasible
3	Suitability to Early Childhood Characteristics	4,36	Highly Feasible
Overall Average		4,35	Highly Feasible

Based on these results, the model has met the criteria for content, linguistic, and pedagogical feasibility, as recommended in research on early childhood education service development (Branch, 2023). The experts' suggestions for improvement focused on simplifying the visual display and adapting the illustrations to reflect the local cultural context of Aceh, in line with the principles of contextual learning in early childhood education (Gea & Aeni, 2025).

1.4 Limited-Scale Pilot Testing Results

The results of the limited-scale pilot testing indicate a significant improvement in young children's understanding of preventive communication. The average comprehension score increased from 58.4 prior to the implementation of the model to 82.7 after implementation, with an N-gain value of 0.58, which falls within the moderate category. In addition, the percentage of children able to identify safe body parts increased from 46% to 81%, while children's confidence in expressing discomfort rose from 39% to 76%. These findings are consistent with previous studies demonstrating that preventive communication-based educational interventions supported by interactive media significantly enhance young children's awareness of safe body concepts and communication skills (Finkelhor et al., 2021; Siregar & Sitorus, 2025). A summary of the pilot testing results is presented in the table below.

Table 3. Results of the Improvement in Early Childhood Preventive Communication Understanding

Indicator	Before (%)	After (%)	N-gain
Understanding of Safe Body Concepts	46	81	0,60
Confidence in Expressing Feelings	39	76	0,56
Overall Average	58,4	82,7	0,58

1.5 Intervention Outcomes

The intervention outcomes, reflected in the increase in average scores, the percentage of achieved indicators, and the N-gain value, demonstrate that the AI-integrated preventive communication-based guidance and counseling model is effective in improving young children's understanding and preventive communication skills. This indicates that the model can serve as a viable strategy for preventing sexual violence among young children. Teachers and parents also reported that the use of AI-based media enhanced children's interest, focus, and active participation during guidance activities. These findings reinforce previous research stating that the integration of AI in early childhood education services can improve the quality of learning interactions and the effectiveness of educational messages (Hmoud et al., 2020; Mashudi et al., 2025). Overall, the developed model is considered feasible, practical, and effective, with strong potential for broader implementation as a strategic approach to preventing sexual violence among young children in Aceh.

Discussion

The findings of this study indicate that the preventive communication-based guidance and counseling model integrated with Artificial Intelligence (AI) is effective in enhancing young children's understanding and preventive communication skills as an effort to prevent sexual violence in early childhood settings in Aceh. This conclusion is supported by the increase in the average comprehension scores, the percentage of achieved preventive communication indicators, and the moderate N-gain value following the implementation of the AI-integrated preventive communication-based guidance and counseling model. These results support the research hypothesis that a preventive communication approach delivered interactively and aligned with children's developmental stages can serve as an effective strategy for preventing sexual violence from an early age.

The observed improvement in children's understanding of safe body concepts and their confidence in expressing discomfort is consistent with previous studies emphasizing the importance of simple, consistent, and repetitive education in early childhood (A. Amini et al., 2023; R. D. Septiani, 2021). At this developmental stage, children are more capable of recognizing potential risks and verbally expressing their feelings when provided with preventive communication education from an early age. These findings indicate that the developed model functions not only as a medium for information delivery but also as a means of fostering children's courage and self-awareness.

The AI-integrated model demonstrated a significant enhancement in children's engagement throughout the learning activities. Children exhibited more active responses, improved attention, and greater interest in the presented materials (Solichah & Shofiah, 2024; Widiastuti & Hermanto, 2024). AI technology is capable of creating more engaging learning experiences for young children, aligned with their developmental characteristics, and functions as a supportive tool that strengthens the implementation of preventive communication processes.

The model was considered highly relevant and user-friendly by teachers in school settings. This study has produced an educational product that is not only theoretically sound but also practical and contextually grounded, particularly for guidance and counseling services in early childhood education. The developed model offers an innovative alternative to support child protection programs and the prevention of sexual violence among young children, especially in regions with strong cultural and religious values such as Aceh. Furthermore, this research introduces a novel contribution to the field by integrating preventive communication approaches with the use of Artificial Intelligence (AI) in guidance and counseling services.

Conclusion

Based on the research findings, it can be concluded that the preventive communication-based guidance and counseling model integrated with Artificial Intelligence (AI) is effective in enhancing young children's understanding and preventive communication skills in Aceh. The developed model has been demonstrated to be feasible, practical, and aligned with children's developmental characteristics. The use of AI-based media significantly increased children's engagement, attention, and confidence in understanding safe body concepts and expressing discomfort. Practically, this model can support guidance and counseling services in strengthening efforts to prevent sexual violence among young children. Future research is recommended to conduct more in-depth and large-scale trials involving diverse cultural backgrounds and to examine the long-term impact on children's protective behaviors. In addition, subsequent studies may explore the development of more adaptive AI features and collaborative integration with the roles of teachers and parents.

Declarations

Author contribution statement

Putri Fakhрина Sari contributed to the research design, data collection and analysis, and manuscript preparation. Helnita was responsible for model development, validation procedures, and critical review of the manuscript. Raudha Meutia assisted in the literature review, instrument development, as well as data collection and editing. All authors approved the final version of the manuscript and take full responsibility for the content of the article.

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Data availability statement

The data used and analyzed in this study are available from the corresponding author upon reasonable request.

Declaration of interests statement

The authors declare that there are no financial interests or personal relationships that could have influenced or created any potential conflict of interest in this study.

Additional information

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