

EARLY CHILDHOOD DEVELOPMENT SCREENING USING KPSP IN COMMUNITY MIDWIFERY CARE

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ABSTRACT

Background: Early childhood development screening is essential for identifying developmental delays during the critical period of child growth. Community midwives play an important role in providing developmental surveillance and family-centered education using the Indonesian Pre-Screening Developmental Questionnaire (KPSP). **Objectives:** This study aimed to describe the implementation of community midwifery care for early childhood development screening using the KPSP and to evaluate the outcomes of family-based developmental stimulation. **Methods:** A descriptive case study was conducted involving a 34-month-old child in Bangun Rejo Village, Deli Serdang Regency, Indonesia. Data were collected through interviews, direct observation, physical examination, KPSP assessment, documentation review, and home visits. Interventions included developmental screening, parental education, language stimulation, educational play activities, and follow-up evaluation. **Results:** Initial KPSP assessment indicated a doubtful developmental status (score = 8), primarily in the language domain. Following two weeks of family-based language stimulation and continuous parental education, the child demonstrated improved communication skills, including the ability to produce simple sentences, respond to verbal instructions, and engage in more active social interaction. Increased family participation supported the child's developmental progress. **Conclusions:** Community midwifery care using the KPSP effectively facilitated the early identification of developmental concerns and strengthened parental involvement in developmental stimulation. Integrating routine developmental screening with family-centered interventions may contribute to optimizing child development and preventing long-term developmental delays.

Keywords: community midwifery, child development, developmental screening, KPSP, language development

INTRODUCTION

The first five years of life represent a critical period for children's physical, cognitive, language, and socio-emotional development. Development achieved during this period serves as the foundation for health, learning capacity, and productivity throughout the life course. Consequently, early identification of developmental problems has become a global public health priority. According to the World Health Organization, millions of children, particularly in low- and middle-income countries, remain at risk of failing to achieve their developmental potential because of inadequate stimulation, poor nutrition, limited access to quality health services, and unfavorable socioeconomic conditions. (Nations 2025; WHO 2024).

In Indonesia, monitoring child growth and development is an essential component of primary healthcare and is integrated into maternal and child health services. The Ministry of Health recommends routine stimulation, developmental screening, and early intervention to identify developmental problems as early as possible and prevent long-term developmental delays (Kemenkes RI, 2022, 2023). These efforts also contribute to achieving the Sustainable Development Goals (SDGs), particularly Goal 3, which emphasizes ensuring healthy lives and promoting well-being for all at all ages (Nations 2025).

One of the standardized developmental screening instruments recommended in Indonesia is the Pre-Screening Developmental Questionnaire (Kuesioner Pra Skrining Perkembangan/KPSP). This instrument evaluates children's developmental achievements across four major domains, namely gross motor, fine motor, language, and personal-social development according to age-specific milestones. The KPSP has become an important tool for identifying children who require further developmental assessment and early intervention (Kemenkes RI 2022; Khayati and Sulistyowati 2023). Recent international evidence also highlights that standardized developmental screening instruments facilitate the early identification of developmental concerns and improve timely access to appropriate intervention (Kurbatfinski et al. 2024). Recent studies also emphasize that combining parental observations with professional developmental assessment increases the accuracy of early identification and facilitates timely referral for developmental intervention (Segre et al. 2024).

Community midwives play a strategic role in promoting child development through developmental surveillance, parental education, and family empowerment. Beyond conducting developmental screening, midwives are responsible for encouraging parents to provide appropriate developmental stimulation within the home environment. Previous studies have shown that active family participation significantly improves children's developmental outcomes and enhances the effectiveness of community-based child health programs (Husni et al., 2023; Jimenez-arberas et al., 2024; Saputri et al., 2024).

Although developmental screening has been widely implemented in primary healthcare settings, evidence describing the implementation of community midwifery care using the KPSP at the household level remains limited, particularly in rural communities. Most previous studies have focused on identifying developmental delays rather than describing comprehensive community-based interventions involving developmental screening, parental education, home visits, developmental stimulation, and follow-up evaluation (Fitriahadi and Widyantara, 2026;

Lubis *et al.*, 2026). Therefore, this study aimed to describe the implementation of community midwifery care using the Pre-Screening Developmental Questionnaire (KPSP) for early childhood development screening in a 34-month-old child in Bangun Rejo Village, Deli Serdang Regency, Indonesia.

METHODS

This study employed a descriptive case study design to describe the implementation of community midwifery care for early childhood development screening using the Pre-Screening Developmental Questionnaire (KPSP). The study was conducted in Dusun VI, Bangun Rejo Village, Tanjung Morawa District, Deli Serdang Regency, North Sumatra, Indonesia, in 2026. The participant was one child aged 34 months who met the inclusion criteria for community-based developmental assessment and whose parents agreed to participate in the study.

Data were collected through interviews with the child's caregiver, direct observation, physical examination, developmental assessment using the KPSP, documentation review, and sequential home visits. The community midwifery intervention consisted of developmental screening, identification of developmental problems, parental education regarding child growth and development, language stimulation through age-appropriate play activities, and follow-up evaluation to monitor the child's developmental progress.

Data were analyzed descriptively by comparing the child's developmental status before and after the implementation of community midwifery care. The findings were presented narratively to describe the developmental assessment, interventions provided, family involvement, and evaluation outcomes. Ethical principles, including informed consent, confidentiality, anonymity, and respect for participants' rights, were maintained throughout the implementation of community midwifery care.

RESULTS

A 34-month-old child residing in Dusun VI, Bangun Rejo Village, Tanjung Morawa District, Deli Serdang Regency, Indonesia, participated in this community-based case study. The child lived with both parents, who actively participated throughout the implementation of community midwifery care. Initial assessment included history taking, physical examination, developmental screening using the Pre-Screening Developmental Questionnaire (KPSP), and observation of parent-child interaction during home visit.

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Table 1. Participant Characteristics

Variable	Findings
Age	34 month
Sex	Male
Residence	Bangun Rejo Village, Deli Serdang Regency
Living arrangement	Living with both parents
Developmental	KPSP

The initial developmental assessment showed that the child's physical growth was within the normal range for age. However, developmental screening using the KPSP identified concerns in the language domain.

Table 2. Initial Developmental Assessment Using KPSP

Assessment	Findings
KPSP score	8
Developmental status	Doubtful
Gross motor	Age-appropriate
Fine motor	Age-appropriate
Language	Delayed
Personal-social	Age-appropriate

The doubtful developmental status was primarily associated with delayed expressive language. The child demonstrated difficulty producing simple three-word sentences and showed limited verbal communication appropriate for age. Community midwifery care was subsequently implemented through developmental stimulation and family-centered education.

Table 3. Community Midwifery Intervention

Intervention	Description
Developmental screening	KPSP assessment
Health education	Education for parents regarding child development
Language stimulation	Storytelling, picture cards, naming objects, interactive communication
Home visits	Sequential monitoring and reinforcement of stimulation practices
Evaluation	Follow-up developmental assessment

During the follow-up period, parents actively implemented the recommended stimulation activities at home under the guidance of the community midwife.

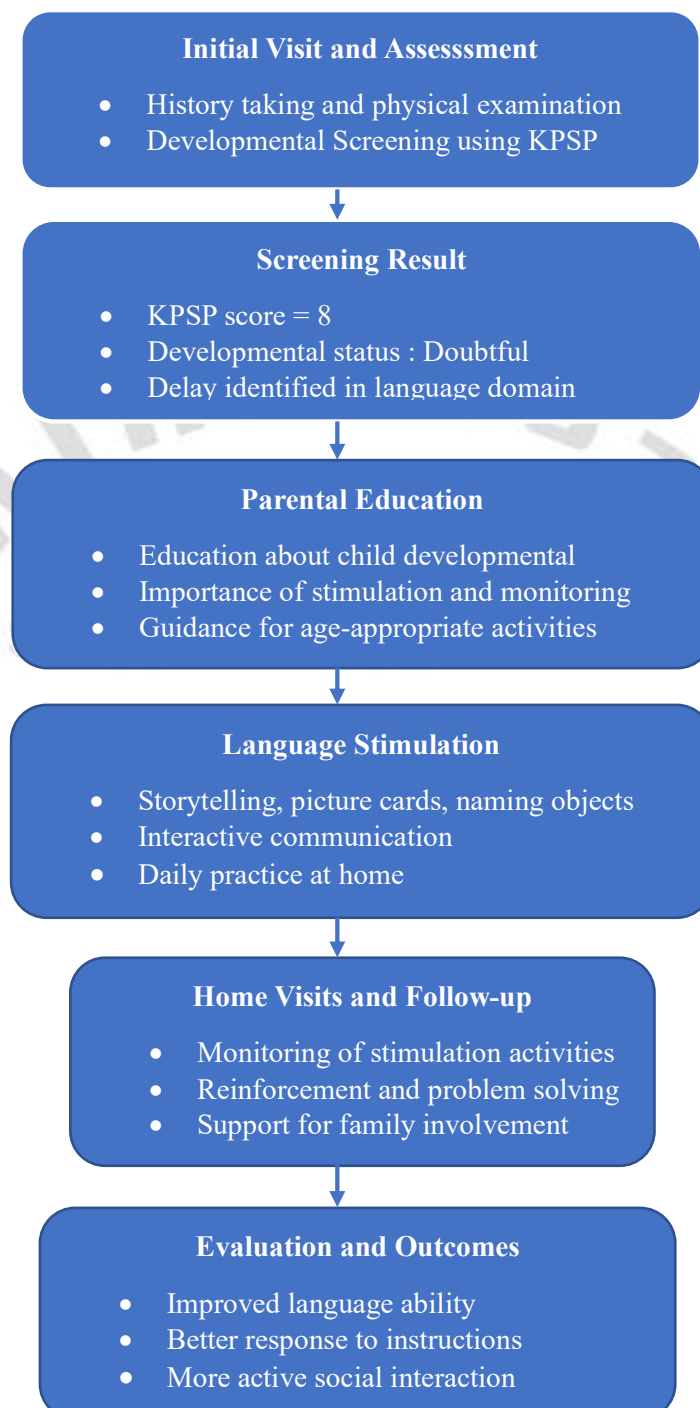
Table 4. Developmental Outcomes Following Community Midwifery Care

Outcome	Findings
Language ability	Improved
Response to verbal instructions	Improved
Social interaction	More active
Family participation	Increased
Follow-up recommendation	Continue routine developmental stimulation and monitoring

Following community-based developmental stimulation and parental education, the child demonstrated gradual improvement in expressive language and communication skills. The child became able to produce simple sentences, respond to verbal instructions more consistently, Following community-based developmental stimulation and parental education, the child demonstrated gradual improvement in expressive language and communication skills.

The child became able to produce simple sentences, respond to verbal instructions more consistently, and interact more actively with family members. Parents also showed improved understanding of age-appropriate developmental stimulation and committed to continuing routine developmental monitoring through community health services.

Figure 1. Conceptual Flow of Community Midwifery Care Using KPSP



Continuous Family Involvement and Routine Monitoring at
Community Health Services

DISCUSSIONS

The present case study demonstrates that community midwifery care, supported by developmental screening using the Pre-Screening Developmental Questionnaire (KPSP), can facilitate the early identification of developmental concerns and promote timely intervention through family-centered care. The initial assessment indicated a doubtful developmental status, particularly in the language domain. After community-based interventions involving parental education, language stimulation, and sequential home visits, gradual improvements were observed in the child's expressive language and communication abilities. These findings emphasize that developmental screening should not be viewed merely as a diagnostic activity but as the first step toward comprehensive developmental management (Kemenkes RI, 2022; Kurbatfinski et al., 2024).

The improvement observed in this case supports growing evidence that language development is strongly influenced by the quality and consistency of caregiver–child interaction. Population-based evidence further demonstrates that caregiver–child interaction mediates children's developmental outcomes by enhancing language acquisition, cognitive development, and social-emotional competence, particularly in early childhood (Chang et al. 2024). Rather than resulting solely from developmental maturation, the child's progress likely reflects the cumulative effects of repeated language exposure, responsive communication, and structured developmental stimulation provided within the home environment. These findings reinforce the concept of family-centered care, in which parents function not merely as caregivers but as active therapeutic partners in promoting children's developmental potential (Jimenez-arberas et al. 2024; World Health Organization 2024).

The findings of this study are consistent with previous studies reporting that developmental screening followed by early intervention improves developmental outcomes among preschool children (Fitriahadi and Widyantara 2026; Khayati and Sulistyowati 2023). Furthermore, recent international evidence indicates that standardized developmental screening instruments facilitate earlier identification of developmental concerns and improve access to timely intervention (Kurbatfinski et al. 2024). These findings reinforce the importance of integrating standardized developmental screening into routine community maternal and child health services.

An important contribution of this study is the demonstration that family participation extends beyond supporting healthcare providers during clinical encounters. Parents who consistently implemented developmental stimulation within their daily routines became active agents of developmental intervention rather than passive recipients of health education (Jimenez-arberas

et al. 2024). Recent evidence also indicates that developmental assessments incorporating parental psychosocial well-being strengthen family engagement and improve the effectiveness of developmental monitoring in primary healthcare settings (Voss et al. 2024). This observation suggests that empowering families may improve the sustainability of developmental programs because stimulation continues within children's natural environments, where learning opportunities occur most frequently (Friedman et al., 2021). These findings support the growing emphasis on family-centered care, which recognizes parents as essential partners in promoting children's developmental outcomes rather than merely accompanying children during healthcare visits (Husni et al. 2023; Saputri et al. 2024).

These findings suggest that developmental screening should be integrated into routine community maternal and child health services not merely as a screening procedure but as the starting point for individualized developmental management (Kementerian Kesehatan Republik Indonesia 2022). When developmental assessment is immediately followed by parental education, home-based stimulation, and continuous follow-up, the likelihood of delayed intervention may be substantially reduced (Ngestiningrum and Qomaruddin 2024). Consequently, community-based developmental surveillance has the potential to strengthen preventive child healthcare while improving family engagement in long-term developmental monitoring. These findings also reinforce the expanding role of community midwives as educators, facilitators, and advocates for family-centered developmental care (Varney, Kriebs, and Gegor 2021).

Despite providing valuable practical evidence, this study has several limitations. The findings were obtained from a single participant and therefore cannot be generalized to the broader population. In addition, the follow-up period was relatively short, limiting the evaluation of long-term developmental outcomes. Future studies involving larger populations, longer observation periods, and comparative research designs are recommended to further evaluate the effectiveness of community-based developmental interventions using the KPSP.

CONCLUSIONS

This case study demonstrates that community midwifery care using the Pre-Screening Developmental Questionnaire (KPSP) is an effective approach for the early identification of developmental concerns and the implementation of family-centered developmental interventions. Developmental screening successfully identified a doubtful developmental status in the language domain, enabling timely parental education, home-based language stimulation, and continuous follow-up.

These interventions were associated with improvements in the child's communication abilities and strengthened family participation in developmental monitoring. The findings suggest that developmental screening should be integrated into routine community maternal and child health services not only as a screening procedure but also as the starting point for individualized developmental management. Community midwives should continue to strengthen family-centered education and promote home-based developmental stimulation through regular follow-up visits. Future studies should evaluate the long-term effectiveness of community-based developmental screening programs across different primary healthcare settings and

explore strategies to strengthen family engagement in early childhood developmental interventions.

CONFLICT OF INTEREST AND FUNDING DISCLOSURE

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