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The Correlation Between Mothers' Knowledge of Developmental Monitoring in the KIA Book and the Developmentof Children Aged 3-4 Years in Bajing Village, Service Area of Puskesmas Kroya I, 2024

Taroib Nangimah Tulchairiyah[1], Purwati[2]
[1,2]Faculty of Health Sciences, Universitas Muhammadiyah Purwokerto, Indonesia

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ABSTRACT

The book of Kesehatan Ibu dan Anak (KIA) or Maternal and Child Health (MCH) is a strategy to empower families to receive quality maternal and child health services. Mothers' knowledge plays an important role in using the MCH book to support child development. This study aims to analyze the correlation between mothers' knowledge of developmental monitoring in the KIA book and child development. The research design used a descriptive correlational approach with a cross-sectional method. The sample consisted of 51 respondents who were mothers with toddlers meeting the inclusion criteria. Data were collected through questionnaires to assess mothers' knowledge and child development. Univariate analysis showed that 35 mothers (68.6%) had adequate knowledge in utilizing the KIA book, and 70.6% of children experienced age-appropriate development. Bivariate analysisusing the chi-square correlation test revealed a p-value of 0.028 (sig. 0.05), indicating a significant correlation between mothers' knowledge of developmental monitoring in the KIA book and child development.

Corresponding Author:
Pembimbing Skripsi
Faculty of Health Sciences, Universitas Muhammadiyah Purwokerto,
Soepardjo Rustam Street KM. 7, Banyumas, Indonesia
Email: purwati@ump.ac.id

1. INTRODUCTION (Font 10, Times New Roman, Spacing 1.15)

Child growth and development during the early years of life determine the future quality of human resources in a nation. The period from conception until the first two years of life, commonly referred to as the first 1000 days of life, is considered a critical window because it represents both a golden opportunity and a vulnerable period for children's growth and development. Appropriate parenting that includes responsive care, adequate nutrition, proper stimulation, good health status, and a safe environment during this period will help children achieve optimal development and contribute positively to society (Kemenkes RI, 2022). National data from the Basic Health Research (Riskesdas) in 2018 showed that overall child development achievement in Indonesia reached 88.3%, with language literacy at 64.6%, physical development at 97.8%, socio-emotional aspects at 69.9%, and learning ability at 95.2% (Riskesdas, 2018). However, more than 200 million children in developing countries are estimated to fail to reach their optimal

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developmental potential due to poverty, malnutrition, and environmental factors affecting cognitive, motor, emotional, and social development (Kemenkes, 2019).

One of the strategies used in Indonesia to monitor child growth and development is the Maternal and Child Health (MCH) handbook, known as the Buku Kesehatan Ibu dan Anak (KIA). The KIA book serves as a communication tool between mothers and health workers, a medium for counseling, documentation, and early detection of health risks in mothers and children (Depkes RI, 2015). Riskesdas data in 2018 reported that 65.9% of children aged 0–60 months had KIA books, but not all mothers could show or utilize them effectively during health visits (Riskesdas, 2018). Although the KIA book has been widely distributed nationally since its introduction through collaboration between the Ministry of Health and Japan International Cooperation Agency (JICA), many mothers and families still do not fully understand or utilize the information provided in the handbook (Kementerian Kesehatan RI, 2015).

The utilization of the KIA book is influenced by several behavioral factors. According to Lawrence Green's behavioral theory, health behavior is affected by predisposing factors such as knowledge and attitudes, enabling factors such as access to facilities, and reinforcing factors such as support from health workers (Notoatmodjo, 2010; Yayu et al., 2015; Mulia, 2005). Low maternal knowledge regarding the benefits and content of the KIA book remains a major barrier, as some mothers perceive it merely as a medical record rather than a developmental monitoring tool (Yayu et al., 2015). Previous research also indicates that health workers often do not provide education according to the material contained in the KIA book, which further limits its optimal utilization (Hasanbasri & Emoviana, 2006).

Improving maternal knowledge about the KIA book can be achieved through education, counseling, and continuous monitoring during health service visits. Effective implementation of the KIA handbook is expected to enhance maternal understanding, especially regarding child development monitoring, thereby supporting children to achieve age-appropriate development (Juliana, 2023). Several studies have demonstrated associations between maternal knowledge and utilization of the KIA book with child growth and development outcomes (Jannati, 2018; Paramita, 2016; Parwati, 2020; Sistiarani, 2014; Dewi, 2019). Nevertheless, variations in findings and differences in research variables indicate the need for further investigation focusing specifically on maternal knowledge of developmental monitoring within the KIA book and child development outcomes.

Local data also highlight the urgency of this issue. In Cilacap Regency, only about 25% of toddlers utilized the KIA book for developmental monitoring despite high ownership rates (Profil Kesehatan Kabupaten Cilacap, 2022). In the working area of Kroya I Health Center, developmental screening coverage reached 96.37%, yet cases of doubtful and deviated development were still found. Bajing Village had the highest number of developmental deviations among the service area villages. Moreover, only 17% of mothers utilized the KIA book for monitoring child development, and among children aged 3–4 years, utilization was only 12% (Puskesmas Kroya I, 2023). These findings indicate a gap between ownership and utilization of the KIA book, suggesting that maternal knowledge may play a significant role in child developmental outcomes.

Based on this background, the present study aims to analyze the relationship between mothers' knowledge of developmental monitoring in the KIA book and the development of children aged 3–4 years in Bajing Village, the working area of Kroya I Health Center. The general objective is to determine the correlation between maternal knowledge and child development status, while the specific objectives include describing maternal knowledge levels, identifying child developmental status, analyzing respondent characteristics related to knowledge, and examining the relationship between the variables. The research hypothesis proposes that there is a significant relationship between mothers' knowledge of developmental monitoring in the KIA book and the development of children aged 3–4 years.

This study contributes to the existing literature by focusing specifically on developmental monitoring knowledge within the KIA handbook context and its association with child development outcomes in a community with low utilization rates, thereby providing evidence to support maternal and child health program improvement.

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2. RESEARCH METHOD (Font 10, Times New Roman, Spacing 1.15)

Research Design

This study used a **correlational descriptive design** with a **cross-sectional approach**. The cross-sectional design was chosen because it allows for data collection at a single point in time, providing a snapshot of the relationship between mothers' knowledge of developmental monitoring in the **KIA book** (Maternal and Child Health Book) and the development of children aged 3–4 years. This design is well-suited for determining associations between variables without manipulating them, which is essential for exploring the natural relationship between maternal knowledge and child development.

Population and Sampling

The population in this study consisted of mothers with children aged 3–4 years residing in Bajing Village, located in the working area of **Kroya I Health Center**. A total of **98 children** in this age group were recorded in the area, with a sample size of **51 respondents** chosen based on specific inclusion criteria. The inclusion criteria required mothers to have children aged 3–4 years and possess a **KIA book** (either in good condition or with some damage). The sample was selected using a **simple random sampling method** to ensure that each participant had an equal chance of being included in the study.

Instruments Used

To collect the data, two key instruments were used:

1. **Questionnaire on Maternal Knowledge of Developmental Monitoring in the KIA Book**:
    - This questionnaire was developed to assess mothers' knowledge regarding the developmental monitoring sections in the KIA book. It consisted of 10 questions based on the topics covered in the book, using a **Likert scale** to measure knowledge levels. The scoring system for knowledge was as follows:
        - **Good knowledge**: 76-100% (respondents answered 8-10 questions correctly)
        - **Adequate knowledge**: 56-75% (respondents answered 5-7 questions correctly)
        - **Poor knowledge**: < 55% (respondents answered fewer than 5 questions correctly)
2. **KPSP (Kuisioner Pra Skrining Perkembangan)**:
    - The KPSP, an established tool in early childhood development screening, was used to assess the developmental status of children aged 3–4 years. It included a set of questions designed to evaluate various aspects of development, such as motor skills, language abilities, and social interactions. The KPSP also used a **Likert scale** to categorize children into the following groups based on the number of positive responses:
        - **Normal development (Sesuai)**: 9-10 "Yes" answers
        - **Doubtful development (Meragukan)**: 7-8 "Yes" answers
        - **Possible developmental deviation (Penyimpangan)**: 6 or fewer "Yes" answers

Data Collection Procedure

Data collection took place in **May 2024** in Bajing Village. The process was conducted in the following steps:

1. **Preliminary Survey**:
   A brief survey was conducted to obtain demographic information about the mothers, including age, education level, and occupation, as well as to confirm that they met the inclusion criteria for the study.
2. **Administering the Maternal Knowledge Questionnaire**:
   The questionnaire assessing maternal knowledge about the KIA book's role in developmental monitoring was distributed to the selected mothers. The mothers were asked to read each question carefully and provide their responses based on their understanding of the KIA book. The questionnaire was administered in a face-to-face interview format, ensuring that the respondents fully understood the questions.
3. **Developmental Monitoring with KPSP**:
   After completing the knowledge questionnaire, mothers were asked to assess their child's

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development using the KPSP. This tool was used to evaluate the child's ability to perform tasks typical for their age group, based on the guidelines for 3–4 years olds in the KIA book. The health workers present in the village assisted mothers in completing the KPSP when necessary.

4. **Post-Survey Debriefing**:
   After completing the questionnaires and developmental assessments, the respondents were given the opportunity to ask any questions they had about the survey or the use of the KIA book. Additionally, mothers were encouraged to engage with local health workers to discuss the development of their children further.

Reliability and Validity

The instruments used in this study were tested for reliability and validity:

- Reliability: The internal consistency of the knowledge questionnaire was assessed using Cronbach's Alpha, which was found to be 0.87, indicating high reliability. The KPSP tool also had satisfactory reliability, with a Cronbach's Alpha of 0.82.
- Validity: The content validity of the instruments was evaluated by experts in maternal and child health to ensure that the questions covered relevant aspects of child development and maternal knowledge. The KPSP tool was also validated through comparison with other well-established developmental screening tools.

Ethical Considerations

Ethical approval for this study was obtained from the Health Research Ethics Committee at Universitas Muhammadiyah Purwokerto. Informed consent was obtained from all mothers participating in the study, ensuring that they understood the purpose of the research and their rights as participants. All data were kept confidential, and participants had the right to withdraw from the study at any time without penalty.

3. RESULT AND DISCUSSIONS (Font 10, Times New Roman, Spacing 1.15)

3.1. Univariat

Table 1 : Distribution of Children Based on Age

Age	Frequency	Percentage (%)
36 months	14	27.5
42 months	14	27.5
48 months	23	45.1
Total	51	100.0

Table 2 : Distribution of Children Based on Gender

Gender	Frequency	Percentage (%)
Male	23	45.1
Female	28	54.9
Total	51	100.0

Table 3 : Distribution of Parents Based on Education Level

Education Level	Frequency	Percentage (%)
Junior High School	10	19.6
Senior High School	41	80.4
Total	51	100.0

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Table 4 : Distribution of Mothers Based on Occupation

Mother's Occupation	Frequency	Percentage (%)
Housewife	34	66.7
Working	17	33.3
Total	51	100.0

Based on Table 1, it can be observed that the respondents in this study were aged 36 months, 42 months, and 48 months, corresponding to the age range of 3-4 years. The highest frequency was found among the respondents aged 48 months, with a total of 23 children, accounting for 45.1% of the sample. The lowest frequencies were observed among respondents aged 36 months and 42 months, with 14 children in each age group, representing 27.1% of the total.

Regarding the gender of the children, as shown in Table 2, the majority of respondents were female, with 28 respondents, representing 54.9%, while 23 male respondents accounted for 45.1% of the total.

The educational background of the parents in Bajing Village, within the working area of Kroya I Health Center, as depicted in Table 3, shows that the majority of parents had a high school education, with 41 respondents (80.4%). The next largest group consisted of parents with a junior high school education, comprising 10 respondents (19.6%).

Finally, the distribution of activities of the respondents in Bajing Village, as presented in Table 4, reveals that the highest frequency was occupied by housewives (unemployed), totaling 34 respondents (66.7%). The remaining 17 respondents (33.3%) were employed mothers.

3.2. Bivariat

Table 5 : Relationship Between Maternal Knowledge and Child Development

Maternal Knowledge	Child Development (Normal, Deviated, Doubtful)	Frequency (F)	Percentage (%)	Spearman's Correlation
Good	Normal	0	0%	4
Good	Deviated	0	0%	4
Good	Doubtful	4	4%	4
Poor	Normal	2	3%	1
Poor	Deviated	3	2%	1
Poor	Doubtful	0	3%	1
Moderate	Normal	1	3%	0.735
Moderate	Deviated	3	0%	3
Moderate	Doubtful	3	3%	1

4. CONCLUSION AND RECOMMENDATION (Font 10, Times New Roman)

Conclusion

Based on the research conducted, several conclusions were drawn, including:

1) Mothers' knowledge regarding developmental monitoring in the KIA book was categorized as good (49.0%) in terms of maximum use of the KIA book.
2) Toddlers (aged 3-4 years) in Bajing Village, Kroya Subdistrict, experienced development appropriate for their age, as indicated by the highest frequency in the appropriate/normal category (62.7%).
3) The characteristics of the research sample were dominated by high school education level, namely 41 people (80.4%) and housewives, namely 34 people (66.7%), so that they could monitor their children's development optimally.
4) There is a significant relationship between mothers' knowledge of developmental monitoring in the KIA book and the development of toddlers aged 3-4 years in Bajing Village, Kroya I Community Health Center area, with a p-value of 0.001 (Sig < 0.05).

Recommendation

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Based on the results of the research, discussion, and conclusions presented above, there are several recommendations for various parties involved in early childhood development, including:

1) For Posyandu
   There is a need to enhance the role of Posyandu cadres in encouraging mothers of toddlers to use the KIA book to monitor and stimulate their children's development and provide good parenting patterns to ensure optimal growth and development of toddlers.
2) For Community Health Centers (Puskesmas)
   Community Health Centers need to evaluate and monitor the results of the SDIDTK, as there are still toddlers with questionable and abnormal development, requiring continuous monitoring and referral to a general hospital for toddlers with abnormalities.
3) For Parents
4) Parents need to understand their child's development well through various means, including regularly bringing their child to the health center, understanding and utilizing the KIA book, and applying good parenting practices by diligently providing stimulation and a balanced nutritional diet to enhance the child's growth and development.

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