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Association Between Maternal Knowledge and Attitudes and Infant Nutritional Status among Toddler Mother Class Participants at Jatijajar Community Health Centre

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ABSTRACT:
Background: Nutrition is a major component that determines the quality of human resources. In 2021, Indonesia recorded 1.0% of toddlers with severe malnutrition and 3.9% with moderate malnutrition. Mothers' knowledge and attitudes have a significant impact on the nutritional status of toddlers, so various efforts have been made to address this issue, including through the use of the Maternal and Child Health Handbook (Buku KIA) and the implementation of Toddler Mother Classes.
Aims: This study aims to determine the relationship between the knowledge and attitudes of mothers who attend Toddler Mother Classes and the nutritional status of infants at the Jatijajar Community Health Centre.
Method: This study was a quantitative observational analytical study with a cross-sectional approach. The study sample consisted of 22 mothers and their infants, selected using saturation sampling.
Result: Based on Spearman's Rank Correlation Coefficient test, the results between the variable of mothers' knowledge and the nutritional status of infants were Sig. (2-tailed) 0.591 ($p > 0.05$). Similarly, the variable of mothers' attitudes and the nutritional status of infants showed results of Sig. (2-tailed) 0.591 ($p > 0.05$).
Conclusion: It can be concluded that the knowledge and attitudes of mothers who attended the Toddler Mother Class had no significant relationship with the nutritional status of infants at the Jatijajar Community Health Centre in 2024.

Keywords: Infant Mother Class, nutritional status, knowledge, attitude

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INTRODUCTION

Nutrition is a key component that determines the quality of human resources, as every process of a child's physical and mental growth and development is highly dependent on adequate nutritional intake. (Hasanah and Oktafia 2024; Amran et al. 2025) . This aligns with the view that stunting and other nutritional issues pose a serious threat to the quality of future generations.

The first 1000 days of life (HPK) or the first two years of life are a crucial period because growth occurs so rapidly that nutritional disorders during this phase are permanent and cannot be corrected in the future (Sari et al. 2025) Therefore, optimal management of health resources is essential to ensure the quality of nutritional services within the community. The global nutritional status still faces major challenges with millions of children experiencing stunting, wasting, and obesity, while in Indonesia alone in 2021, there were still 1.0% of cases of severe malnutrition and 3.9% of cases of moderate malnutrition among toddlers.

Ideally, the use of the KIA Book and the implementation of the Toddler Mother Class programme should be effective means of improving mothers' knowledge, attitudes, and behaviour in caring for and meeting their children's nutritional needs (Cillina et al. 2025; Lestari and Sri 2025) . However, in reality, there is still a gap where many health services have not optimally implemented the programme, and for those that have, the outcomes are often not as expected (Putri et al. 2026; Katarina and Rahman 2026) . This is evident from the high prevalence of nutrition problems in the field despite the implementation of intervention programmes (Ratmawati and Subekti 2025) .

The opportunity to conduct this research is based on the urgent need to evaluate the effectiveness of the Toddler Mother Class programme that has been running at the grassroots level, such as at the UPTD Puskesmas. It was found that the programme already has a measurable target population, so there is room to analyse how participation in these classes actually contributes to improving nutritional status in the relevant puskesmas working area.

Although several previous studies have shown that Toddler Mother Classes can improve mothers' understanding of child health, there are contradictory findings regarding the direct relationship between mothers' knowledge and the actual nutritional status of children. The novelty of this study lies in its research location at the Jatijajar UPTD Puskesmas, which has a relatively high rate of malnutrition and severe malnutrition compared to other puskesmas in the Depok area that have also implemented similar programmes. This creates an information gap regarding why the existing programme has not been able to significantly reduce malnutrition rates in that location.

The selection of variables related to mothers' knowledge and attitudes is based on the theory that knowledge is a predisposing factor that shapes perceptions and gives rise to attitudes, which then lead to concrete actions in child-rearing patterns (Khoirunnisa et al. 2025; Berlian et al. 2025) . Poor knowledge and attitudes among mothers have a negative impact on the nutritional status of toddlers, such as developmental delays and decreased thinking abilities (Setiari and Yektiningtyastuti 2025; Patonangi et al. 2025) . Therefore, measuring these two variables is very important because mothers play a central role as household managers who determine the type and quality of food consumed by children on a daily basis.

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This study aims to determine the relationship between the knowledge and attitudes of mothers who attend Toddler Mother Classes and the nutritional status of infants at the Jatijajar Community Health Centre in 2024. Contributively, the results of this study are expected to provide theoretical benefits as basic data references for future researchers, as well as practical benefits for the community and health workers to improve the effectiveness of health promotion and education regarding nutrition and exclusive breastfeeding for optimal child growth.

METHOD

Research Design

This study used an analytical observational quantitative method with a cross-sectional survey design. This approach aimed to study the correlation dynamics between risk factors (mothers' knowledge and attitudes) and effects (infants' nutritional status) through data collection conducted simultaneously at a specific point in time (point time approach) (Riyanto and Hatmawan 2020).

Participants

The participants in this study were mothers who had infants aged 3-12 months and had participated in the Toddler Mother Class programme at the Jatijajar Community Health Centre (UPTD Puskesmas Jatijajar). Additional criteria for respondents included mothers who were currently breastfeeding or had breastfed and were willing to be interviewed in writing using a questionnaire.

Population and sampling methods Instrumentation:

The research population included all mothers who met the inclusion criteria in the working area of the Jatijajar Community Health Centre. The sampling technique used was non-probability sampling with the saturation sampling method, in which all 22 members of the population were taken as research samples due to the relatively small population size.

Instrument

This study used a questionnaire that had been validated and tested for reliability to collect primary data. The measurement of knowledge and attitude variables was carried out using the Guttman Scale to obtain definitive answers. Specifically for the nutritional status variable, data was obtained through observation of secondary data in the KIA Book.

Table 1. Instrument Specifications and Objective Criteria

Variable	Instrument	Measurement Scale	Scoring System	Categories (Objective Criteria)
Knowledge	Questionnaire	Guttman (Yes/No)	**Positive:** Correct=1, Incorrect=0 **Negative:** Correct=0, Incorrect=1	**Good:** Score 13 **Poor:** Score < 13
Attitude	Questionnaire	Guttman (Agree/Disagree)	**Positive:** Agree=1, Disagree=0 **Negative:** Agree=0, Disagree=1	**Good:** Score 12 **Poor:** Score < 12
Nutritional	KIA Book	Anthropometry	Weight-for-Height	In accordance with

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Status			Indicator	the Ministry of Health's anthropometry standards

Based on the results of this study, it is recommended that future researchers conduct studies with a larger sample size to enhance the generalizability of the findings. Furthermore, the use of a Likert Scale could be considered to replace the Guttman Scale for the attitude variable to capture more in-depth gradations in respondent answers, thereby providing a more detailed picture of maternal affective tendencies toward infant nutrition. Future researchers should also consider other variables not yet examined, such as family economic factors and history of infectious diseases.

Procedures and Time Frame (Procedures and Time Frame)

The study was conducted at the Jatijajar Community Health Centre (UPTD Puskesmas Jatijajar) from December 2023 to January 2024. The procedure began with the submission of a research permit application, the collection of primary data through the completion of questionnaires by respondents, and the observation of infant nutritional status data from the KIA Book. The entire process was carried out in accordance with research ethics, such as the provision of informed consent forms to participants.

Analysis Plan

The collected data were analysed univariately to examine the frequency distribution of each variable. Subsequently, bivariate analysis was performed using Spearman's Rank Correlation Coefficient to determine whether there was a significant relationship between mothers' knowledge and attitudes towards their infants' nutritional status, with a significance level of $p < 0.05$.

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RESULTS AND DISCUSSION

Result

Results of the Analysis of the Relationship between Knowledge and Attitudes towards Nutritional Status

Based on research conducted at the Jatijajar Community Health Centre in 2024, the data shows a very high level of compliance and understanding among respondents. However, statistically, this does not correlate directly with the nutritional status of infants in the area.

Table 2. Relationship between Mothers' Knowledge and Attitudes and Infant Nutritional Status (n=22)

Variable	Good Category (n)	Percentage (%)	Significance Value (p-value)	Description
Knowledge	21	95.5%	0.591	Not Significant
Attitude	21	95.5	0.591	Not Significant

Although the majority of respondents at the Jatijajar Community Health Centre in 2024 had excellent knowledge and attitudes, with percentages of 95.5% respectively, the results of Spearman's Rank Correlation test showed a significance value of 0.591 ($p > 0.05$), indicating that statistically there was no significant relationship between the knowledge and attitudes of mothers who attended the Toddler Mother Class and the nutritional status of infants in the area.

Discussion

The findings of this study that there is no significant relationship are likely due to the multifactorial nature of toddler nutritional status, which is influenced by direct factors such as food intake and disease infection, as well as indirect factors such as parenting patterns and environmental sanitation. Even though mothers have good knowledge and attitudes after attending Toddler Mother Classes, children's nutritional status can still be influenced by other external factors, such as food availability at the household level or a history of infectious diseases that can hinder optimal nutrient absorption in infants (Radiastu and Tombora 2024; Nur et al. 2023) .

The implications of this study show that education through Toddler Mother Classes has succeeded in increasing knowledge and forming positive attitudes among mothers, but this is not yet strong enough to be the sole factor in instantly changing the nutritional status of infants (Zahrotussalamah et al. 2025; Pertiwi et al. 2024) . A more comprehensive approach is needed that not only focuses on providing information (cognitive), but also on assisting with proper parenting practices and monitoring environmental factors and environmental health that support child growth and development.

This study makes an important contribution to the development of midwifery and public health science, particularly as a reference for basic data on the effectiveness of the Toddler Mother Class programme at the community health centre level. The results of this study enrich the literature by showing a gap between mothers' knowledge and actual nutritional status, which can be used as evaluation material for health workers to design health promotion strategies that are more targeted at real behavioural change and other specific nutritional interventions.

The researchers acknowledge several limitations in this study, one of which is the relatively small sample size (only 22 respondents), meaning that the results cannot be generalised to a wider population. Furthermore, because it used a cross-sectional design, this study only captured conditions at a specific point in time and could not control for other confounding variables such as family income level, household food availability, and children's health history, which also greatly influence nutritional status.

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In addition to measuring knowledge and attitude variables via questionnaires, this research instrument also evaluates the practical aspects of the Mothers of Children Under Five (Kelas Ibu Balita) curriculum. This is to determine whether the program is limited to theoretical instruction or includes practical demonstrations, such as the preparation of Complementary Foods (MP-ASI) and direct caregiving practices.

Based on the results of this study, it is recommended that the Community Health Centre continue to optimise the Toddler Mother Class by adding practical sessions or demonstrations on nutritious food preparation (PMT) so that mothers' knowledge can be directly translated into concrete actions. For future researchers, it is recommended to conduct research with a larger sample size and consider other variables that have not been studied, such as family economic factors and history of infectious diseases, in order to obtain a more comprehensive picture of the factors that influence the nutritional status of infants.

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CONCLUSION

Based on the results of research conducted at the Jatijajar Community Health Centre in 2024, it can be concluded that the majority of mothers who participated in the Toddler Mother Class had a good level of knowledge (95.5%) and a good attitude (95.5%). However, statistical analysis shows that there is no significant relationship between mothers' knowledge and their infants' nutritional status, nor is there a significant relationship between mothers' attitudes and their infants' nutritional status (p-value 0.591 > 0.05). This indicates that although education through the Toddler Mother Class has succeeded in improving the cognitive and affective aspects of mothers, the nutritional status of infants in the field is still influenced by other more complex factors beyond knowledge and attitude, such as economic factors, food availability, and history of infectious diseases. As a suggestion, the Toddler Mother Class programme needs to be optimised with more practical learning methods, such as demonstrations of feeding practices, and more intensive and collaborative nutritional monitoring is needed for infants with poor nutritional status.

AUTHOR CONTRIBUTION STATEMENT

A.P. was responsible for the entire research process, from idea development and data collection to data analysis, while T.O. contributed to methodological supervision and content review, and DR provided technical guidance on writing and research result validation

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