

# The Correlation between Mother's Education and Knowledge in Nutritional Conscious Family Behaviour of Toddler in Kota Batu

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## Abstract

Balanced nutrition is very important to provide from the early stages of life because it can influence good physical and mental development and health in the future. For toddlers, more serious efforts are needed to achieve balanced nutrition so that it is useful for improving the early stages of toddlers' lives. The Indonesian government has created the Keluarga Sadar Gizi (KADARZI) program to reduce nutritional problems in Indonesia. The aim of this research is to determine the relationship between maternal education and knowledge in nutritionally conscious family behavior among toddlers in Batu City. This research is a quantitative research with an observational type of research with a cross sectional design. This research observed that subjects were observed only once when collecting data on the relationship between maternal education and knowledge in implementing nutritionally conscious families simultaneously. The sampling technique for this research uses a simple random sampling technique, namely a sampling technique that is carried out randomly and comes from an existing population by paying attention to inclusion criteria and exclusion criteria. Based on the output results obtained, the significance value of the Pearson Chi Square Test in the knowledge category was 0.004. Because the significance value is less than the alpha value ( $<0.05$ ),  $H_0$  is rejected, this shows that there is a relationship between maternal education and maternal knowledge regarding Nutrition Aware Family behavior.

**Keywords:** mother, education, nutrition, toodler, KADARZI, knowledge

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## 1. Main text

The first thousand days of life play a crucial role in influencing the cognitive development and physical growth of a child. Psychosocial factors such as economic status, parental education, and environmental exposure can determine how the first thousand days of a child's life unfold. Additionally, other factors such as balanced nutrition also have an impact (Katulla et al., 2014). Balanced nutrition is crucial from the early stages of life as it can affect both physical and mental development, as well as future health. In toddlers, serious efforts are needed to achieve balanced nutrition, which is beneficial for enhancing the early stages of a toddler's life (Hasibuan et al., 2019). Poor nutrition can affect a toddler's condition, leading to issues such as

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underweight or overweight. Conditions like overweight can increase the risk of diseases such as diabetes and heart disease. Furthermore, overweight can also influence psychological disorders in children, such as depression (Goldthorpe et al., 2018). Parents, especially mothers, play a significant role in providing nutrition during the toddler years because mothers serve as role models in family eating behaviors (Yabancı et al., 2014).

The Indonesian government has implemented the Family Nutrition Awareness Program (Keluarga Sadar Gizi - KADARZI) to address nutritional issues in the country (Wijayanti & Susila, 2017). According to the Minister of Health of the Republic of Indonesia's Decision No. 747, a Family Nutrition Awareness (KADARZI) is a family that can recognize, prevent, and address nutritional issues for each of its members. Mothers play a crucial role in assisting the KADARZI program in addressing nutritional problems within the family, as determining the amount of food given to children is often a mother's responsibility (Scaglioni et al., 2018). According to a 2003 WHO report, a lack of knowledge about appropriate feeding practices for children is a primary cause of malnutrition in developing countries. Nutrition education and counseling can significantly contribute to improving proper feeding practices for toddlers and children (AlSamarrai et al., 2020). However, it is not yet known whether maternal education influences knowledge about providing balanced nutrition in the Bumiaji District of Batu City.

## 2. Methods and Materials

This research is a quantitative research with an observational type of research with a cross sectional design. This research observed that subjects were observed only once when collecting data on the relationship between maternal education and knowledge, attitude and practice in implementing nutritionally conscious families simultaneously. The sampling technique for this research uses a simple random sampling technique, namely a sampling technique that is carried out randomly and comes from an existing population by paying attention to inclusion criteria and exclusion criteria.

## 3. Results and Discussion

### 3.1. Respondent Education

Based from the research of 100 respondent, the findings are presented as follows

Table 1. Frequency Distribution of Respondents Based on Mother's Education

Mother's Education	Frequency	Percentage
Elementary School	4	4%
Junior High School	14	14%
Senior High School	63	63%
University	19	19%
Total	100	100%

Based on the Table 1 above, the findings of this research depict respondents based on the category of Mother's Education, with the highest number of respondents being from the category of Senior High School with a total of 63 respondents (63%), and the least represented category being Elementary School with 4

respondents (4%). The research results by Sugiyanto et al. (2019) indicate that the characteristics of mothers, based on education, are predominantly those with a high level of education, specifically from the Senior High School (SMA) education level, accounting for 73.3%.

### 3.2. Knowledge

Based from the research of 100 respondent, the findings are presented as follows

Table 2. Frequency Distribution of Respondents Based on Mother's Knowledge

Criteria	Frequency	Percentage
Good	11	11 %
Fair	63	63 %
Low	26	26 %
Total	100	100 %

Parents with low educational levels, especially mothers, are a fundamental and crucial factor because they significantly influence the abilities of individuals, families, and communities to manage available resources to obtain an adequate food supply (Hartono et al., 2017). Lack of knowledge about nutrition can lead to a low quality of food intake consumed by children. According to Notoatmodjo (2012), education influences a person's learning process, and the higher the level of education, the easier it is for someone to absorb information.

The higher the mother's education, the greater her knowledge about nutrition that is beneficial for her child, thereby reducing the risk of having a child with stunting. Maternal education influences the care of toddlers, the allocation of family food, especially for toddlers, and the mother's knowledge about her baby's health. Mothers with higher education levels have a better understanding of healthy lifestyles, ensuring the health of their toddlers, protecting them from infectious diseases, and more.

### 3.3. The Correlation between *Mother's Education* and Knowledge

Based from the analysis of the correlation between mother's education and knowledge using Chi Square method, findings are presented as follows

Table 3. Cross-tabulation analysis

Education Level	Knowledge						Total		p-value
	Good		Fair		Low				
	N	%	N	%	N	%	N	%	
Elementary School	0	0	1	1	3	3	4	4	0.004
Junior Hugh School	2	2	5	5	7	7	14	14	
Senior High School	4	4	44	44	15	15	63	63	
University	5	5	13	13	1	1	19	19	
Total	11	11	63	63	26	26	100	100	

The results of this study indicate that maternal education has a significant relationship with mothers' knowledge regarding the Family Nutrition Awareness Program (Keluarga Sadar Gizi - KADARZI). This could be attributed to the fact that education can theoretically influence a mother's knowledge about a child's nutritional status. The higher the knowledge and understanding of health, the better the perspective on the concepts of health and illness, ultimately influencing one's views, lifestyle, and efforts to improve health status (Setiyowati & Erna, 2017).

Mothers with lower levels of education are not necessarily incapable of providing balanced nutrition to their children. Mothers with lower levels of education can possess better nutritional knowledge if they are diligent in reading information and participating in educational sessions about balanced nutrition (Septikasari, 2018). Conversely, mothers with higher levels of education have a greater opportunity to obtain and understand information about nutrition, thus enhancing maternal knowledge (Rosha et al., 2013).

#### 4. Conclusion

In summary, maternal formal education can provide theoretical knowledge about family nutrition awareness and the provision of balanced nutrition to children. Health education sessions at integrated health posts (Posyandu) are an example of non-formal education that can enhance mothers' knowledge levels, enabling them to providing balanced nutrition to toddlers.

In essence, formal education equips mothers with theoretical knowledge, while non-formal education, such as health education sessions at integrated health posts, serves as a practical avenue to reinforce and apply that knowledge in the context of child nutrition. The combination of both formal and non-formal education can contribute significantly to improving mothers understanding related to providing balanced nutrition for their young children.

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#### References

- Al-Samarrai, S., Gangwar, M., & Gala, P. (2020). The Impact of the COVID-19 Pandemic on Education Financing. *Economic Impact of COVID-19*. <https://openknowledge.worldbank.org/handle/10986/33739>.
- Goldthorpe, J., Nazneen, A., & Rachel, C. (2018). Providing Healthy Diets for Young Children: The Experience of Parents in a UK Inner City. *International Journal of Qualitative Studies on Health and Well Being*, 13(1).
- Hartono, Widjanarko, B., & Setiawati, M. (2017). Hubungan Perilaku Keluarga Sadar Gizi (KADARZI) dan perilaku Hidup Bersih Sehat (PBHS) pada Tatanana Rumah Tangga dengan Status Gizi Balita Usia 24-59 Bulan. *Jurnal Gizi Indonesia*, 5(2), 88–97.
- Hasibuan, A. ., Saragih, S., & Amry, Z. (2019). Developoment of Learning Materials Based on Realistic Mathematics Education to Improve Problem Solving Ability and Student Learning Independence. *International Electronic Journal of Mathematic Education.*, 14(1).
- Katulla, D., Sarkar, R., Sivarathinaswamy, P Velusamy, V., Venugopal, S., Naumova, E. ., Muliyl, J., Ward, H., & Kang, G. (2014). The First 1000 Days of Life: Prenatal and Postnatal Risk Factors for Morbidity and Growth in a Birth Cohort in Southern India. *BMJ Open*, 4(7).

- Notoatmojo, S. (2011). Pendidikan dan Perilaku Kesehatan. PT. Rineka Cipta.
- Rosha, B. ., Putri, K., Sisca, D., Putri, S., & Yunita, I. (2013). Determinan Status Gizi Pendek Anak Balita dengan Riwayat Berat Badan Lahir Rendah (BBLR) di Indonesia (Analisis Data Riskesdas 2007-2010). *Indonesia Journal of Health Ecology*.
- Scaglioni, S., Cosmi, V. ., Cipolino, V., Parazzini, F., Brambilla, P., & Agostoni, C. (2018). Factor Influencing Children's Eating Behaviours. *National Library of Medicini.*, 10(6).
- Septiari, B. . (2012). Mencetak Balita Cerdas dan Pola Asuh Orang Tua. Nuha Medika.
- Septikasari, M. (2018). Faktor-faktor yang Mempengaruhi Pemberian Makanan Pendamping (MP-ASI) Dini di Desa Sidamulya. Kecamatan Kemrajen Kabupaten Banyumas. Universitas Padjajaran
- WHO. (2010). *Measuring Change in Nutrition Status* Geneva.
- Wijayanti, S., & Susila, N. . (2017). Hubungan Penerapan Perilaku Kadarzi (Keluarga Sadar Gizi) dengan Status Gizi Balita di Kabupaten Tulungagung. *Amerta Nutrition.*, 1(4).
- Yabanci, N., Kusac, I., & Karakus, S. S. (2014). The Effect of Mother's Nutritional Knowledge on Attitudes and Behaviors of Children about Nutrition. *Procedia Social and Behavioral Science* 116.