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The Effect of Family Type, Parental Stress Level, and Drinking Water Type on the Nutritional Status of Children Aged 1-5 Years

Sindi Nur Santika Dewi¹, Maulida Nurfazriah Oktaviana^{2*}, Firdawsy Nuzula³

^{1,2,3} Nursing Department, Rustida College of Health Sciences, Banyuwangi, Indonesia

**Corresponding author:* lida.nurfazraih@gmail.com

ABSTRACT

Background: The nutritional status of toddlers reflects the quality of their health and development. In Indonesia, nutritional problems such as stunting, wasting, underweight, and overweight remain prevalent. Family factors, parental stress, and drinking water quality play important roles, but are rarely studied simultaneously. **Object:** This study aims to identify the influence of family type, parental stress levels, and drinking water type on the nutritional status of children aged 1-5 years in the Spenajang Community Health Center area. **Method:** A quantitative, correlational analytic study with a cross-sectional design was conducted on 90 respondents using a consecutive sampling technique. Data were collected through questionnaires and anthropometric measurements. Data were analyzed using the Chi-square test and ordinal logistic regression. **Results:** The nutritional status of children showed wasting in 5.6%, underweight in 22.2%, overweight in 27.8%, and normal in 44.4%. There was a significant influence between family type ($p=0.028$), parental stress ($p=0.046$), and drinking water type ($p=0.027$) on nutritional status. Multivariate analysis showed family type as the dominant factor ($p=0.001$; Wald=10.261; OR=1.03), followed by parental stress (OR=0.78; $p=0.002$) and drinking water type (OR=0.80; $p=0.004$). **Conclusion:** Family factors, parental psychological well-being, and water quality significantly contribute to nutritional status, with family type being the most influential factor. Promotive interventions for child nutrition require family involvement and improvements in household water quality.

Keywords: Type of Drinking Water, Family Type, Parental Stress Level, Nutritional Status

BACKGROUND

The nutritional status of children should be a primary concern for every parent, as the age of 1 to 5 years is a critical period when nutritional imbalances can occur and must be addressed immediately (Jaya W, 2022). As children reach toddlerhood, they require adequate nutritional support to promote their physical growth and development (Ulfa I, 2022). Nutritional status disorders, including both malnutrition and undernutrition in toddlers, affect not only physical growth but also cognitive development, impacting the productivity of human resources in the future (Badan

Kebijakan Pembangunan Kesehatan, 2022).

The problem of nutritional status in toddlers worldwide in 2022, according to World Health Organization data, includes stunting, wasting, underweight, and overweight. The prevalence of stunting is 22.3%, wasting is 6.8%, and overweight is 5.6%. The prevalence of stunting in Asia reaches 22.3%, wasting reaches 9.3%, and overweight reaches 5.1% (UNICEF, 2023). In 2022, Indonesia experienced a decrease in stunting prevalence from 24.4% to 21.6%, an increase in wasting from 7.1% to 7.7%, an increase in in

underweight from 17.0% to 17.1%, and a decrease in overweight from 3.8% to 3.5% (Munira, 2023). SSGI 2022 in East Java. Toddlers with stunting reached 19.2%, wasting 7.2%, underweight 15.8%, and overweight 3.6% (Badan Kebijakan Pembangunan Kesehatan, 2022). The prevalence of nutritional status problems in toddlers in Banyuwangi Regency is high, with the number of stunting toddlers at 3.5%, wasting at 7.0%, underweight at 17.3%, and overweight at 2.2% (Munira, 2023), as long as there is data on underweight as much as 1.4% and stunting as much as 0.8% (Dinas kesehatan Banyuwangi, 2023).

Factors influencing a child's nutritional status are complex, ranging from family factors, family type, and parenting patterns to the environment and the availability of basic resources such as safe drinking water. Family size determines the ease of meeting nutritional needs. In families with fewer members, food needs are more easily met, and vice versa, which can impact a child's nutritional status (Jaya W, 2022). Several cases in Indonesia show that families experiencing high levels of stress tend to provide fast food or less nutritious food to their children due to time constraints (Anwar, 2022). In addition, hygiene-related factors, such as drinking water for children, including bottled and draw well water, have not been taken into account, thus posing special risks related to their quality (Prüss-Ustün et al., 2019).

Malnutrition can have long-term impacts on a child's brain development, immune system, and digestive function. If malnutrition is not addressed promptly, the risk of stunting, wasting, or obesity in the future will increase (Aristiyani, 2023). Community empowerment and education activities can increase awareness of the importance of children's nutrition to fulfill the body's nutritional needs (Jaya W, 2022). It is hoped that the integrated health post (posyandu) cadres will increase the awareness of mothers of toddlers

regarding environmental sanitation, especially drinking water management, and focus on the nutritional needs of young children (Anwar, 2022).

RESEARCH METHODS

Description of Materials or Research Subjects

The subjects in this study were all 926 toddlers in Karangharjo village. The sample used was 90 samples selected based on the following inclusion criteria: mothers of toddlers who were willing to be respondents, children who met their parents every day, while the exclusion criteria were as follows: mothers who had children with chronic diseases such as asthma, diarrhea, pneumonia, and children who were cared for by adoptive parents.

Research Design

This research design uses quantitative correlational analysis with a cross-sectional approach. The sampling method used in this study is consecutive sampling.

Research Procedure

Researchers created questionnaires for respondents to complete. After validity and reliability tests, the questionnaires were distributed to participants who matched the predetermined sample. Researchers explained the purpose of the study and asked participants to sign a consent form. If respondents were unsure how to complete the questionnaire, researchers assisted them in completing and providing answers. The questionnaires and data were collected.

Instruments and Equipment

The tool used in this study was a questionnaire sheet.

Data Collection Method

The data collection method used a survey with a questionnaire sheet that has been declared valid and reliable. The research instrument used a family-type questionnaire, a modified type of drinking

water, with a validity test result of an r-value of 0.548 and a reliability test showing a value of 0.729, thus considered valid. The standardized parental stress level questionnaire has a validity test result with an r value of > 0.413 and a reliability test value of 0.797.

Data Analysis

Univariate analysis was used to analyze each variable, bivariate analysis employed the chi-square test to determine the relationship between variables, and

multivariate analysis utilized logistic regression to identify the most dominant factor. The analysis was conducted using the IBM SPSS Statistics 24 application.

Research Ethics: This research has obtained ethical permission with No: 262/03/KEPK-STIKESBWI/VII/2024-2025

RESULT AND DISCUSSION

Table 1.

Frequency Distribution of Family Type, Parental Stress Level, Drinking Water Type, and Nutritional Status of Children Aged 1-5 Years

No	Anxiety control factors	Good Control 50-100%		Poor Control 0-40%		Total	
		Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency	Percentage (%)
1	Pharmacological Method	1	3,57	0	0	1	3,57
2	Non Pharmacological Method	14	50,00	13	46,43	27	96,43

Based on Table 1 the results of this study show the anxiety control among working primigravida mothers. The use of pharmacological methods was recorded in

1 respondent (3.57%) with good control. Meanwhile, the use of non-pharmacological methods was found in 27 respondents (96.43%).

Table 2.

Frequency Distribution of Anxiety Control Factors Through Non-Pharmacological Methods in in Perak Timur Surabaya

No	Anxiety control factors	Good Control 50-100%		Poor Control 0-40%		Total	
		Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency	Percentage (%)
	Non Pharmacological Method						
1	Relaxation	10	76,92	3	23,08	13	100
2	Distraction	12	70,59	5	29,41	17	100
3	Mental Activity	11	84,62	2	15,38	13	100
4	Self-Appreciation	9	64,29	5	35,71	14	100

No	Anxiety control factors	Good Control		Poor Control		Total	
		50-100%		0-40%			
	Non Pharmacological Method	Frequency	Percentage (%)	Frequency	Percentage (%)	Frequency	Percentage (%)
5	Hypnobirthing	10	100	0	0	10	100
6	Others (Family and Workplace Support)	14	60,87	9	39,13	23	100

Based on Table 2, the results of this study show that the non-pharmacological methods consisted of several techniques. The use of relaxation techniques showed good control in 10 respondents (76.92%) and poor control in 3 respondents (23.08%). The distraction technique showed good control in 12 respondents (70.59%) and poor control in 5 respondents (29.41%). The mental activity technique showed good control in 11 respondents (84.62%) and poor control in 2 respondents (15.38%). The self-appreciation technique showed good control in 9 respondents (64.29%) and poor control in 5 respondents (35.71%). The hypnobirthing technique showed good control in 10 respondents (100%) with no respondents showing poor control. Other factors, such as family and workplace support, involved the highest number of respondents (n=23), with 14 respondents (60.87%) showing good control and 9 respondents (39.13%) showing poor control.

Discussion

The study revealed that anxiety control among working primigravida women was achieved through both pharmacological and non-pharmacological methods. Pharmacological methods were used the least, with only one respondent (100%) demonstrating good anxiety control. The limited use of this method is related to concerns about potential side effects of medications on the fetus. Consequently, non-pharmacological approaches such as counseling, relaxation,

and cognitive behavioral therapy are more commonly chosen, as they are safer, more acceptable, and effective—especially for mild to moderate anxiety (Yonkers et al., 2009).

Non-pharmacological methods were used by 96.43% of respondents. Among these, the relaxation technique showed good anxiety control in 76.92% of respondents. Although simple and easy to apply, its effectiveness may be limited as certain forms of relaxation are already part of daily routines. Nevertheless, relaxation has been shown to reduce cortisol levels in pregnant women, improving sleep quality and mental readiness for childbirth. It is cost-effective, can be performed independently, and may be guided by healthcare professionals (Septianingrum, 2015).

The distraction technique demonstrated good control in 70.59% of respondents. This method involves diverting focus from sources of anxiety toward pleasant or calming activities, such as listening to music, watching movies, reading, drawing, or casual conversations. For working pregnant women, distraction provides a practical, short-term relief from anxiety without interfering with primary work activities. It effectively reduces negative thoughts and allows the body and mind to relax (Amini, 2018).

Mental activities showed good anxiety control in 84.62% of respondents. This method includes reading, light exercise, and maintaining a healthy diet to redirect attention from excessive worry and promote calmness. These activities

can be performed at home or at work, making them suitable for women with limited time. Positive mental stimulation helps balance emotions, enhance self-control, and prepare psychologically for pregnancy. Light physical activities such as yoga, swimming, or walking stimulate serotonin and endorphin production, which improve mood and reduce anxiety (Alodokter, 2024).

Self-appreciation demonstrated good control in 64.29% of respondents. This strategy, though often overlooked by working pregnant women, is essential for mental well-being. It includes taking time to rest, enjoy leisure, or engage in pleasurable activities such as hobbies or vacations. Self-appreciation is positively correlated with self-acceptance, life satisfaction, happiness, and optimism, serving as an effective coping strategy to reduce anxiety—particularly among women with dual roles and work-related stress (Neff et al., 2005). Educational interventions are needed to raise awareness of the importance of self-appreciation for maternal mental health.

The hypnobirthing technique showed good anxiety control among all respondents (100%). Despite its effectiveness, this technique is rarely practiced by working mothers due to time constraints, limited access to information, and perceptions that special training is required. Hypnobirthing is a natural method that instills positive suggestions into the subconscious mind through affirmations, shifting brain waves from beta to alpha states to induce relaxation. This condition triggers the release of beta-endorphins, which act as natural analgesics, improving mood, enhancing pain tolerance, and reducing anxiety before and during labor (Mongan, 2007; Nursalam et al., 2017).

Family and workplace support yielded the highest response rate with 23 participants, consisting of 14 (60.87%) demonstrating good control and 9 (39.13%) with poor control. This finding

underscores the critical role of social support in maintaining the emotional stability of pregnant women. Family support provides security, boosts confidence, and enhances readiness for childbirth, while a supportive work environment helps alleviate stress and workload. Lack of such support increases anxiety risk. Social support—informational, emotional, and appraisal-based—has been proven effective in reducing anxiety during pregnancy (Dinopawe et al., 2021; Maharani, 2014).

CONCLUSION

Based on the results of this study on anxiety control factors among working primigravida mothers in the working area of Perak Timur Public Health Center, Surabaya, it can be concluded that anxiety control using pharmacological methods showed good results but was minimally applied, with only one respondent using this approach. Non-pharmacological methods, particularly family and workplace support, were found to have a significant influence in helping pregnant mothers cope with emotional pressure during pregnancy

CONFLICT OF INTEREST

In research, conflicts of interest can arise financially, personally/professionally, or institutionally. Financial conflicts occur if the researcher receives support from a party with specific interests, such as a health consultancy company or clinic seeking to influence the results. Personal/professional conflicts occur if the researcher has a personal relationship with the respondents, for example friends or family, which may bias the data or findings. Institutional conflicts occur if the public health center or the researcher's workplace exerts pressure to obtain certain results.

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