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Diet to improve nutritional status in preschoolers

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ABSTRACT

Introduction Preschoolers are a group that is vulnerable to malnutrition. Inadequate nutritional conditions at this stage of development can seriously impact their growth, development, and long-term health. Therefore, proper handling and appropriate dietary strategies are essential to improve the nutritional status of preschoolers.

Objective presents an overview of diets that can improve nutritional status in preschoolers**.**

Methods This type of research is a quantitative cross-sectional study approach. The population in this study was preschool-age children (3-6 years) found in Kanita Tiara Islamic Kindergarten, which amounted to 78 children obtained by totality or using the whole sampling method. Collection of information using food frequency questionnaires and mechanical measurements.

Results show that $\rho = 0.015 < \alpha = 0.05$, meaning a relationship exists between diet and nutritional status in preschool-aged children.

Conclusion diet affects nutritional status in preschool-aged children. Dietary strategies applied to preschoolers should pay attention to their nutritional needs and environmental factors that affect their diet. With a holistic and sustainable approach, it can be expected that the nutritional status of preschoolers can be improved, providing a solid foundation for their optimal health and development.

Keywords: *diet; nutritional status; preschoolers.*

INTRODUCTION

A healthy and balanced diet is essential for preschoolers because this is a crucial stage of growth and development. A relatively common deviant eating behavior among children is picky eating (Pereboom *et al.*, 2023). Both intervention arms reported lower food insecurity, more frequent consumption of nutritious foods, and more diverse maternal and child diets compared with households in the control group (Maffioli *et al.*, 2023). Eating fast is associated with higher adiposity, certain cardiometabolic risk factors, and lower adherence to a Mediterranean diet (Garcidueñas-Fimbres *et al.*, 2023). Recent evidence suggests that diet inequities between men and women may have diminished within rural Bangladeshi households (Coleman *et al.*, 2023). Vitamin A deficiency (VAD) is common in populations with limited dietary diversity and access to vitamin A-rich foods (Werner *et al.*, 2023). Accurate assessment of toddler diet quality is essential for understanding current intakes and evaluating the effect of interventions and programs to promote healthy eating and prevent chronic disease (Kay *et al.*, 2023).

Nutritional status in preschoolers is very important because this period is a period of rapid growth and development. Good nutritional status is crucial in ensuring children grow and develop optimally and preventing nutrition-related health problems. Young children have high dietary requirements relative to their body size, making healthy diets critical for average growth and development (Hennessy *et al.*, 2023). Aging challenges elderly individuals, increasing the risk of malnutrition due to physical, psychological, functional, and social changes. Poor nutritional status is directly related to available capacity and can increase the risk of morbidity and mortality. Early identification of the risk of malnutrition among older people can promote independence and well-being with a good quality of life (Vetlesen *et al.*, 2024). Nutritional status is one of the critical factors determining the short- and long-term outcomes of surgery in cancer (Titapun *et al.*, 2023). earthquake survivors are exposed to malnutrition. Therefore, it is recommended that adequate food and nutritional supplements be provided to all earthquake survivors (K. Nutritional status was associated with functional capacity and indicators of morbidity profile in older people. Future research should prioritize investigating routine screening programs to assess the risk of malnutrition and the effectiveness of nutrition interventions such as dietary modifications and supplementation to prevent malnutrition in older adults (Gokhale, Garg, and George, 2024).

Preschoolers are children between 3 and 6 years old and usually have not started formal education in elementary school. They are in an essential development period, during which they begin to develop fundamental social, emotional, physical, and cognitive skills. Preschoolers generally spend most of their time at home, playing with peers and possibly attending preschool or kindergarten programs. The research has important implications in many fields, including child health, education, public policy, and society. For example, they are improving child health, improving the quality of education, and developing public policies. Help identify healthy diets and nutritional needs essential for optimal growth and development and help build more effective public policies supporting children's health. This includes the development of nutrition guidelines, nutrition education programs, and regulations related to food and beverages in the preschool environment and the community at large. This research aims to present an overview of diets that can improve nutritional status in preschoolers.

MATERIALS AND METHODS

This study used an analytical observational design with a cross-sectional study approach, namely the measurement time or observation of independent and dependent

variable data measured simultaneously at the same time. This research has been carried out. The population in this study was preschool-age children (3–6 years), which amounted to 78 children, and all of these populations were sampled. Data collection using instruments to measure children's eating patterns using a Food Frequency questionnaire (FFQ). Before measuring instruments were used in this study, trials were carried out first on questionnaires. The trial was conducted on 57 preschool-aged children consisting of 43 question items. Based on the results of data analysis, 15 items that were deciduous and 28 items that were valid were obtained. The item's validity moves from 0.265-0.787 above the calculated r-value with a reliability of 0.863. To assess the nutritional status of children, mechanical measurements are carried out by weighing the child's weight, which is then compared with the anthropometric measurement scale BB / U) with a ratio scale. Poor Nutrition: if Z-score < - 3 SD, Nutrition is lacking; if Z-score - 3.0 SD to < - 2.0 SD, Good Nutrition: if Z-score - 2.0 SD to 2.0 SD, Nutrition more; if Z-score >2.0 SD. Univariate analysis of each variable studied namely diet and nutritional status, to determine the frequency and presentation of each variable learned. Using a computerized system, the bivariate analysis used a statistical chi-square test with a meaning level of α=0.05 to determine the relationship between diet and nutritional status of preschool children.

RESULTS

Table 1 Analysis of the relationship between diet and nutritional status in preschool children

Diet	Nutritional Status of Preschool Children								P-Value
	More		Good		Less		Total		
	f	%	f	%	f	%	f	%	
Good	8	10,3	64	82,1	0	0,0	72	92,3	0,015
Less	0	0,0	2	2,6	4	5,1	6	7,7	
Total	8	10,3	66	84,6	4	5,1	78	100	

In the results of the analysis of the relationship between diet and nutritional status in preschool-aged children, researchers used the Chi-Square test with the Kolmogorov-Smirnov alternative test. They obtained a value of ρ = 0.015. These results can conclude that the alternative hypothesis (Ha) is accepted and the null hypothesis (Ho) is rejected; thus, there is a relationship between diet and nutritional status in preschool-aged children. Based on the study's results, it was found that from the 78 respondents studied, 64 (82.1%) respondents had a good diet category with good nutritional status.

DISCUSSION

Researchers found a relationship between diet and nutritional status in preschool-aged children. A combination of poor oral health status and malnourishment ultimately affects the person's quality of life (Singh and Talmale, 2023). Lifestyle modifications, including eating habits and meal timing based on PM recommendations, may improve nutritional status in older adults (Sanaie *et al.*, 2023). This demonstrated that sugarcane growing had better livelihood outcomes

and positively impacted asset ownership and food security but had a mixed effect on nutrition indicators among children in growing sugarcane and non-sugarcane households (Kaahwa *et al.*, 2023). Participants transitioning to an unrestricted diet while on pegvaliase maintained adequate nutritional status with no clinically significant changes in cardiovascular or glycemic markers (Viau *et al.*, 2023).

Nutritional status and BMI may modulate nutritional status, muscle mass, and physical performance response to DM (as compared with ONS), suggesting DM may improve nutritional status and physical performance in women at risk of malnutrition and with lower BMI and improve muscle mass in women with a higher BMI (Kruger *et al.*, 2023). Malnutrition can increase the incidence of pressure injuries, and specific nutritional interventions can reduce the incidence of pressure injuries compared to standard Nutrition (Chen *et al.*, 2023). The modified Controlling Nutritional Status group comprehensively reflects nutritional, immune, and inflammatory status (Zhang *et al.*, 2024). Among older adults, various sleep-wake-related indicators differed in their relationships with nutritional status. Sleep-wake disturbances may indicate undernutrition in this population (Lin *et al.*, 2023). Each infectious disease has three infectiological parameters: susceptibility, infection, and recovery. These parameters are affected by many environmental and biological/clinical factors associated with the pathogen (Hussain and Borah, 2024). Education by using cartoon media on mothers' knowledge about child nutrition. There is an influence of education using cartoon media on maternal knowledge about food. Parents of toddlers are encouraged to work with health professionals to provide socialization, education, and child nutrition counseling to deepen their understanding of nutritional status (Suprapto, 2022).

When facing malnutrition in daily clinical practice, body composition should be assessed. These results should tailor the proposed nutritional intervention to prevent the onset of late-life disability (Calcaterra *et al.*, 2024). Occlusal support might be associated with nutritional intake or nutritional status in the older population, although each study has methodological limitations. The evidence is still insufficient, and more well-designed studies are required (Mikami *et al.*, 2023). results may assist the planning of interventions aiming at the role of schools in the empowerment of children in promoting their health (Portes, da Silva, and de Oliveira, 2023).

CONCLUSIONS

It was concluded that there was a significant influence between the provision of education about diarrhea and the level of knowledge of mothers in preventing diarrhea in children. In preventing diarrhea in children, education is crucial in increasing the understanding and awareness of parents, educators, and the general public. Through effective teaching, it is hoped that a community aware of the importance of preventing diarrhea, providing maximum protection for children's health, and embracing the values of hygiene and healthy living practices in daily life can be formed. With joint efforts, we can achieve positive change toward more effective and sustainable prevention of diarrhea in children worldwide.

REFERENCES

Calcaterra, L. *et al.* (2024) 'Sarcopenia and poor nutritional status in older adults,' *Clinical Nutrition*, 43(3), pp. 701–707. doi: 10.1016/j.clnu.2024.01.028.

Chen, B. *et al.* (2023) 'Nutritional status as a predictor of the incidence of pressure injury in adults: A systematic review and meta-analysis,' *Journal of Tissue Viability*, 32(3), pp. 339–

348. doi: 10.1016/j.jtv.2023.04.005.

Coleman, F. M. *et al.* (2023) 'Diets of Men and Women in Rural Bangladesh Are Equitable but Suboptimal,' *Current Developments in Nutrition*, 7(7), p. 100107. doi: https://doi.org/10.1016/j.cdnut.2023.100107.

Garcidueñas-Fimbres, T. E. *et al.* (2023) 'Associations Between Eating Speed, Diet Quality, Adiposity, and Cardiometabolic Risk Factors', *The Journal of Pediatrics*, 252, pp. 31-39.e1. Doi: 10.1016/j.jpeds.2022.08.024.

Gokhale, D., Garg, R. and George, R. M. (2024) 'Assessing the link between nutritional status, functional capacity, and morbidity profile in the community-dwelling elderly of Maharashtra, India,' *International Journal of Africa Nursing Sciences*, 20, p. 100654. doi: 10.1016/j.ijans.2023.100654.

Hennessy, Á. *et al.* (2023) 'Poor Quality Diets Characterized by Low-Nutrient Density Foods Observed in One-Quarter of 2-Year-Olds in a High Resource Setting', *The Journal of Nutrition*, 153(9), pp. 2678–2688. doi: 10.1016/j.tjnut.2023.06.029.

Hussain, Z. and Borah, M. D. (2024) 'Genetic algorithm for optimising infectiological parameter values under different nutritional status', in. Elsevier. doi: 10.1016/bs.adcom.2023.12.001.

Kaahwa, R. M. *et al.* (2023) 'The influence of sugarcane growing by smallholder farmers on household livelihood, food security, and nutrition status of children below five years in mid-western Uganda,' *Journal of Agriculture and Food Research*, 14, p. 100895. doi: 10.1016/j.jafr.2023.100895.

Kay, M. C. *et al.* (2023) 'Comparing Diet Quality Indices for Low-Income 24-Month-Old Toddlers: Exploring Changes Driven by 2020–2025 Dietary Guidelines for Americans', *The Journal of Nutrition*, 153(1), pp. 215–224. doi: 10.1016/j.tjnut.2022.11.016.

kheiry, M. *et al.* (2024) 'Nutritional status among earthquake survivors: a systematic review and meta-analysis,' *Public Health*, 227, pp. 24–31. doi: 10.1016/j.puhe.2023.11.028.

Kruger, M. C. *et al.* (2023) 'A comparative intervention trial of deer milk and an oral nutritional supplement efficacy for improving older adults' nutritional status, muscle mass, and physical performance,' *Clinical Nutrition ESPEN*, 57, pp. 346–357. doi: 10.1016/j.clnesp.2023.07.018.

Lin, R.-A. *et al.* (2023) 'Associations between Various Sleep-Wake-Related Indicators and Nutritional Status in Community-Dwelling Older Adults: The Yilan Study, Taiwan,' *The Journal of Nutrition, health, and Aging*, 27(10), pp. 861–867. doi: 10.1007/s12603-023-1984-z.

Maffioli, E. M. *et al.* (2023) 'A Prepandemic Nutrition-Sensitive Social Protection Program Has Sustained Benefits for Food Security and Diet Diversity in Myanmar during a Severe Economic Crisis,' *The Journal of Nutrition*, 153(4), pp. 1052–1062. doi: 10.1016/j.tjnut.2023.02.009.

Mikami, R. *et al.* (2023) 'Association between occlusal supports and nutritional status in older adults: A systematic review,' *Journal of Dental Sciences*. doi: 10.1016/j.jds.2023.09.014.

Pereboom, J. *et al.* (2023) 'Association of picky eating around age 4 with dietary intake and

weight status in early adulthood: A 14-year follow-up based on the KOALA birth cohort study', *Appetite*, 188, p. 106762. doi: 10.1016/j.appet.2023.106762.

Portes, L. A., da Silva, C. S. A. and de Oliveira, N. C. (2023) 'Nutritional status and physical activity of school-aged children with distinct health habits,' *Clinical Nutrition ESPEN*, 57, pp. 219–225. doi: 10.1016/j.clnesp.2023.06.039.

Sanaie, S. *et al.* (2023) 'Is there a link between Persian medicine eating habits and the nutritional status of older adults? A cross-sectional study, *Advances in Integrative Medicine*, 10(2), pp. 58–63. doi 10.1016/j.aimed.2023.05.003.

Singh, S. and Talmale, P. (2023) 'Impact of dental caries and nutritional status on oral health-related quality of life in young Indian adolescents,' *Journal of Oral Biology and Craniofacial Research*, 13(4), pp. 506–510. doi: 10.1016/j.jobcr.2023.05.002.

Suprapto, S. (2022) 'Pengaruh Edukasi Media Kartun Terhadap Peningkatan Pengetahuan Ibu dan Status Gizi Anak', *Journal of Health (JoH)*, 9(2), pp. 81–87. doi: 10.30590/joh.v9n2.500.

Titapun, A. *et al.* (2023) 'Preoperative controlling nutritional status (CONUT) score is an independent prognostic factor in cholangiocarcinoma patients treated with hepatectomy,' *Heliyon*, 9(10), p. e20473. doi: 10.1016/j.heliyon.2023.e20473.

Vetlesen, H. S. *et al.* (2024) 'Nutritional status and dietary intake in children and adolescents with spinal muscular atrophy types II and III on treatment with nusinersen,' *Clinical Nutrition Open Science*, 53, pp. 57–67. doi: 10.1016/j.nutos.2023.12.005.

Viau, K. *et al.* (2023) 'Nutritional status of adults with phenylketonuria on pegvaliase: A 15-month prospective study', *Molecular Genetics and Metabolism Reports*, 37, p. 101015. doi 10.1016/j.ymgmr.2023.101015.

Werner, E. R. *et al.* (2023) 'The Effects of One Egg Per Day on Vitamin A Status Among Young Malawian Children: A Secondary Analysis of a Randomized Controlled Trial', *Current Developments in Nutrition*, 7(3), p. 100053. doi: 10.1016/j.cdnut.2023.100053.

Zhang, X. *et al.* (2024) 'Modified Controlling Nutritional Status (mCONUT) serves as a promising prognostic factor in patients with cancer cachexia,' *Nutrition*, 117, p. 112229. doi: 10.1016/j.nut.2023.112229.

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