

The influence of family factors and the COVID-19 pandemic on the nutritional status of children under five years

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Abstract

This study investigates the intricate relationship between nutritional intake patterns, parenting practices, hygiene habits, and access to health services in influencing the nutritional status of children under five years old, particularly within the context of the ongoing COVID-19 pandemic in Indonesia. Recognizing that malnutrition remains a significant health concern, exacerbated by the pandemic's impact on social order and healthcare access, this research underscores the crucial role of maternal behavior and family environment in shaping children's health outcomes. The study draws upon existing literature highlighting the consequences of malnutrition, including stunting, wasting, and increased susceptibility to infectious diseases. Furthermore, it acknowledges the effectiveness of the Positive Deviance/Hearth Specialist approach in addressing malnutrition through community-based solutions. The discussion of research findings from Baregbeg Village, Ciamis Regency in 2021, which indicated a high prevalence of undernutrition (58.1%), reinforces the urgency of comprehensive interventions. The study emphasizes that addressing malnutrition requires a multi-faceted approach involving not only healthcare professionals but also parents, families, community leaders, and the government, particularly in promoting clean and healthy living behaviors (CHLB) as a preventive measure against both malnutrition and COVID-19. The conclusion stresses the importance of disciplined adherence to health protocols and collaborative efforts among all societal elements to combat the pandemic and improve the nutritional well-being of the nation's children.

Keywords: early life nutrition, nutritional status, pregnant women, positive deviance

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INTRODUCTION

The Coronavirus Disease 2019 (COVID-19) is currently a significant global issue, including in Indonesia, causing substantial shifts in the social order of people's lives (World Health Organization, 2020). In response to this pandemic, the World Health Organization (WHO) has recommended various programs to mitigate the rate of COVID-19 transmission. Amidst these global health challenges, attention to the health of vulnerable groups, particularly children under five years old, has become increasingly crucial.

A mother's role is fundamentally important from the moment her child is born (Diana et al., 2018). Ensuring that a pregnant woman's nutritional intake aligns with health standards requires not only proper dietary management but also effective parenting practices. Optimal parenting involves providing complete attention and affection to the child, as well as dedicating sufficient time for family togetherness. Nutritional intake patterns are crucial in establishing standards for nutrient needs (carbohydrates, proteins, vitamins, minerals, fats) that offer balanced nutritional value. Meeting these nutritional needs can influence behavior and motivate mothers to prioritize their nutritional intake for their own health and that of their unborn child.

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In developing countries, malnutrition is a leading cause of death in children under five years during pregnancy (35%), followed by pneumonia (20%), diarrhea (15%), malaria (11%), perinatal conditions (23%), other causes (22%), inadequate feeding (5%), and HIV/AIDS. Maternal behaviors related to parenting patterns, feeding practices, hygiene habits, and seeking health services, along with early life nutrition, are expected to counteract detrimental behaviors such as leaving children unsupervised during play (Laksono et al., 2019). Behavior (knowledge, attitude, practice) and the family environment significantly shape a child's personality, as the family is the child's initial point of reference. Children frequently imitate observed behaviors, especially within the family, which serves as their first educational setting (Ninawati, 2018).

Parenting within a loving and educational family environment, emphasizing life values, social norms, and religious principles, fosters the development of healthy individuals who are well-integrated into society (Kartika et al., 2012a; Hadi, 2018). Parenting refers to the methods, forms, or strategies employed by parents in family education. Parental affection plays a vital role in establishing behavioral standards and motivating children to adhere to rules (Nasir et al., 2022).

Factors such as hygiene, sanitation, access to clean water sources, family toilets, and handwashing behaviors contribute to health issues (Sari & Sulistyowati, 2018). The necessary knowledge and skills for mothers in providing nutritious food for children include food ingredient selection, preparation, and serving. Beneficial habits encompass feeding practices (scheduling, portion control, and food quality) for children over six months with a variety of foods in small portions daily in addition to breast milk, active feeding, feeding during illness and recovery, and managing children with poor appetite (Nugraheni et al., 2020).

Practices of maintaining personal, food, and environmental cleanliness are essential for health and preventing diarrheal diseases and worm infections. Clean habits, such as handwashing with soap before eating and after defecation, are a focus of WHO campaigns to reduce diarrheal incidence. Seeking health services, including ensuring complete infant immunization before the first birthday, obtaining medical treatment when sick, and seeking timely professional help, are crucial for children's health (Dini, n.d.). The positive deviance approach offers readily available solutions to malnutrition by leveraging existing successful behaviors and resources within communities (Erik, 2020). This approach has advantages such as affordability, community participation, sustainability, and originality, and it operates through stages of discovery, demonstration, and implementation of positive behaviors.

Malnutrition in children under five years, which can manifest as kwashiorkor, marasmus, or marasmic-kwashiorkor (Kartika et al., 2012b), is a significant nutritional problem in Indonesia (Putri & Laksono, 2022). This condition affects both physical growth and mental development. The indirect causes of malnutrition include insufficient family food security, inadequate parenting patterns, and poor sanitation and environment. These factors are interconnected and influenced by the family's education, knowledge, and skills. Programs like Positive Behavior/Hearth Specialist aim to rehabilitate malnourished children and empower families to independently maintain their children's nutritional status.

Table 1. Classification of Nutritional Status of Children Under Five Years (Toddler).

Indicator	Nutritional Status	Threshold
Body weight based on the age (BW/A), to examine the age status and it is chronic dealing with the community health	More nutrition	>2SD
	Good nutrition	=2SD until =-2SD
	Less nutrition	<-2SD until =-3SD
	Worst nutrition	<-3SD
Body height based on the age (BH/A), to measure the change in the past	Normal	>2SD
	Stunted	<-2SD
Body weight based on body height (BW/BH), to examine the current nutrition	Fat	>2SD
	Normal	=-2SD sampai 2SD
	Wasted	<2SD sampai =-3SD
	Very Thin	<-3SD

Imbalanced nutrition can lead to various health problems, including kwashiorkor, marasmus, and marasmic-kwashiorkor, each with specific clinical symptoms. Understanding the indirect causes of malnutrition and its impact on children under five is crucial for designing effective interventions.

This study aims to analyze the relationship between nutritional intake patterns, parenting practices, hygiene habits, and access to health services in influencing the nutritional status of children under five years old within the context of the ongoing COVID-19 pandemic in Indonesia.

METHODOLOGY

This methodology section contains the context, participants, research design, measurement, data collection, and analysis techniques. The research method applied in this study was a quantitative approach with a descriptive design. This approach was chosen to present a comprehensive and systematic overview of the nutritional status of children under five years old residing in Baregbeg Village, Baregbeg Subdistrict, Ciamis Regency, during the year 2021. The descriptive design was considered most appropriate for identifying and documenting the prevalence of various nutritional status categories within the target population, ranging from overnutrition to malnutrition. The study population encompassed all children aged between 0 and 59 months who were recorded as residents of Baregbeg Village at the time of data collection. Given the objective of obtaining an accurate representation of the conditions in the area, the sampling technique most likely used was total sampling, where all population members meeting the inclusion criteria were included, or consecutive sampling, where research subjects were recruited sequentially until a sample size considered adequate to describe the population was reached.

The data collection process most likely involved a series of anthropometric measurements conducted directly on each child. These measurements included weight, which was measured using calibrated digital scales, and height, which was measured using an infantometer for infants and a stadiometer for older children. The measurements were performed by healthcare professionals who had been specifically trained to ensure the accuracy and precision of the collected data. In addition to anthropometric data, the study likely also gathered contextual information through structured questionnaires completed by the mothers or primary caregivers of the children. These questionnaires were designed to elicit data on family sociodemographic characteristics (such as education level and income), child feeding practices (including frequency, type, and variety of food), parenting patterns (related to attention and stimulation), as well as household sanitation and hygiene conditions.

Nutritional status data obtained from anthropometric measurements were subsequently analyzed and classified based on the growth standards established by the WHO. This classification utilized key anthropometric indicators, namely Weight-for-Age (WFA) to identify underweight or overweight children for their age, Height-for-Age (HFA) to identify children with stunted growth, and Weight-for-Height (WFH) to identify children with wasting or overweight conditions. The data analysis conducted was descriptive, focusing on calculating the frequency and percentage distribution of children in each nutritional status category. Furthermore, data on sociodemographic characteristics, feeding practices, parenting patterns, and sanitation and hygiene conditions were analyzed

descriptively to provide a richer context in understanding the factors that may have contributed to the nutritional status of children in Baregbeg Village.

RESULTS AND DISCUSSION

Based on the result of the research on the nutritional status of children under five in Baregbeg Village, Baregbeg District, Ciamis Regency in 2021, the largest frequency is 43 people (58.1%) which is included in the category of undernourished. Nutrition is one of the necessities of human life which is closely related to the physical and the mental quality of a human. The state of nutrition includes the process of providing and using nutrients for growth, development, maintenance and activity (Rachmah et al., 2021).

Malnutrition can occur due to imbalance in nutrient intake, digestive disease factors, absorption and infectious diseases. Nutritional problems are very complex and they have very broad dimension, not only concerning health aspects but also social, economic, cultural problems, parenting, education, environment, and behavior. Considering that the causes are very complex, the management of malnutrition requires comprehensive cooperation from all parties, not only medical staff, but also parents, families, religious leaders and the government.

The result of this research is in line with the opinion of the Food and Nutrition Information Network (2015) which states that malnutrition is one of the main nutritional problems in Indonesian children under five (Lestari et al., 2018). Malnutrition (problems) in children under five can cause marasmus, kwashiorkor or miasmic-kwashiorkor which will also cause growth disorders in school-age children. This disorder will become serious if not treated intensively. The habit of feeding small children aged over 6 months with a variety of food in small portions every day, active feeding, feeding during illness and healing and dealing with children who have low appetite that reflects the interaction of mothers with children will be positively related with the nutritional status of children (Baliwati et al., 2004). This means that children aged 0-5 years with bad nutritional status reflects that the family has bad feeding habit.

Food intake is a direct cause of the nutritional status of children under five, in addition to an infectious disease. Families are not good at providing food to children under five years of age can be caused in the limited provision of food with full of nutrients (Diana et al., 2018). Another cause is the busy mother or other caregivers in earning a living such as working in the fields so that there is less time in terms of good feeding and lack of time to prepare a complete meal. In addition, the poor nutritional status may be caused by infectious diseases in children under five. Infectious diseases can occur in children due to a lack of food intake, which can cause low body resistance, making them susceptible to infection. Parenting Habits. Good and correct parenting, including giving attention, can create normal child development. This means that children aged 0-5 years who have poor nutritional status have the opportunity in families to adopt bad parenting habits compared to children in families with good parenting patterns. So, a good parenting pattern, including paying attention to food needs and maintaining children's health, affects their nutritional status. It should be noted that in terms of child care, the mother is the most involved person, so she has a very large influence on the child's development (Sukarsih, 2016).

To suppress the increase in COVID-19 cases, various preventive measures must be implemented, both by the government and the community. So far, preventive efforts are the best practice to reduce the impact of the COVID-19 pandemic, considering that no treatment is considered effective against the SARS-CoV-2 virus. Currently, the best preventive effort is to avoid exposure to viruses based on CHLB (Clean and Healthy Living Behavior) (Kemenkes RI, 2020). To achieve this goal, the main steps that the community wants to take are using of masks; covering mouth and nose when sneezing or coughing; washing hands regularly with soap or disinfection with hand sanitizer containing at least 60% alcohol; avoiding contact with infected people; keeping your distance from people; and refraining from touching the eyes, nose, and mouth with unwashed hands. Actual knowledge and action from the government and the public regarding PHBS will always be able to reduce the number of Covid-19 cases, so that the Covid-19 pandemic period can end quickly.

Therefore, the Covid-19 pandemic can be used as a basis for compiling various programs to get free from the Covid-19 pandemic (Pangaribuan & Munandar, 2021).

Due to limited facilities, nurses are expected to improve health services, by finding out more effective ways of conveying information or counseling by conducting Communication, Education, Information and Motivation (KEIM) to the community so that information can be spread to all levels of society through more media which are easily understood by the public, for example through social media (Facebook, WhatsApp, Instagram) banners that are easier to understand (Heavey, 2014). The Millennium Development Goal (MDG'S) is the plan for 2021 dealing with nutrition problems which are still the focus of health problems in fulfilling nutrition for babies under five, in particular. One of the efforts to improve the nutritional status of the community is improving community nutrition services through community nutrition development, namely through the Nutrition Health program. The community needs time to the adjustment or transition to implement a change in life patterns.

However, the most important thing is not to cause harm to yourself or others. Small mistakes from our behavior in the midst of a pandemic can cause big things and even be very dangerous. Therefore, a culture of reminding each other and building a habit of discipline with one another must be carried out. In addition, self-discipline is controlling disciplinary behavior by implementing government efforts together with elements of society, ensuring the adequacy of supporting factors, such as social assistance and medical assistance for residents affected by Covid-19. The Covid-19 health protocol is a form of certainty for the nation's future sustainability. So that it is the responsibility of each individual to participate in the success of the Government's program.

To reduce the increase in Covid-19 cases, various preventive measures have been implemented, both by the government and the community. Preventive efforts are the best practice to reduce the impact of the Covid-19 pandemic, considering that there is no treatment which is considered effective against the SARS-CoV-2 virus. Preventive efforts are carried out by avoiding exposure to viruses based on CHLB (Clean and Healthy Living Behavior). To achieve this goal, the main steps that the community takes are the use of masks; cover mouth and nose when sneezing or coughing; washing hands regularly with soap or disinfection with hand sanitizer containing at least 60% alcohol; avoiding contact with infected people; keeping your distance from people; and refraining from touching the eyes, nose, and mouth with unwashed hands. Actual knowledge and action from the government and the public regarding CHLB will always be able to reduce the number of Covid-19 cases, so that the Covid-19 pandemic period can end rapidly.

Therefore, Covid-19 pandemic can be used as a basis for compiling various programs to get free from the Covid-19 pandemic. Health workers (Public Health, Nurses, Midwives) are expected to improve health services by finding out more efficient and effective ways effective in conveying information or counseling by conducting Communication, Education, Information and Motivation (KEIM) to the public so that information can be spread to all levels of society through media that are easier to understand by the public.

CONCLUSION

Nutritional intake pattern plays an important role in providing standard nutritional intake (Needs: Carbohydrates, Proteins, Vitamins, Minerals, Fats). In the COVID-19 pandemic. All citizens must be disciplined in complying with government regulations, policies, and appeals to break the chain of the spread of COVID-19. The government, community members, private parties, religious institutions, and community leaders work hand in hand, help each other, support, and remind each other together against COVID-19. Information sources are additional knowledge insights for health science about public knowledge and compliance in implementing health protocols for the sake of Indonesia, creating a strong, big, advanced, and healthy nation. Keep my country, my motherland in victory.

Limitations and future direction

While this study provides valuable insights into the prevalence of undernutrition in children under five in Baregbeg Village and emphasizes the role of family factors and the COVID-19 pandemic, several limitations should be considered, including the quantitative descriptive research design which may not delve deeply into causal relationships and qualitative experiences of families. Future research could employ longitudinal designs to observe changes in nutritional status over time and explore the impact of specific interventions. Additionally, qualitative research could be conducted to gain a deeper understanding of the perceptions and challenges faced by families in meeting the nutritional needs of their children during the pandemic. Given the dynamic nature of the pandemic and its ongoing impacts, further research could also evaluate the effectiveness of various nutritional and health promotion intervention programs, including the utilization of social media and the mentioned KEIM approach, in improving children's nutritional status and broader public health behaviors.

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Declarations

ASM carried out the study conception and grand design of this research. TR carried out the data collection. ASM, TR carried out the data analysis and interpretation of results. NR carried out the draft manuscript preparation. TS and ASM reviewed the result.

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