SHORT COMMUNICATION article

A questionnaire study of the prevalence of childhood malnutrition in the Narayanganj area in Bangladesh

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Abstract: A relative or absolute shortage of one or more nutrients results in malnutrition. It is a major public health concern for children under ten in low-income countries. A state of nutritional deficiency caused by inadequate protein or calorie intake is known as malnutrition. Children in developing countries frequently suffer from primary acute malnutrition as a result of insufficient food supplies brought on by social, economic, and environmental factors. From November to December 2024, a self-designed descriptive questionnaire study was carried out in the Narayanganj region of Bangladesh. The study included all relevant the study included all relevant information from their parents about their children aged one to ten years who had malnutrition-related problems. At most 62.6% of the children were from rural areas, whereas 37.1% were from town areas and 52.6% of parents were educated according to their interpretation. Analyzing the children's weight revealed that, 49 of them are underweight, 139 have a suitable body mass index, and 22 are heavyweight, with a body mass index greater than 48.6% of children were in excellent physical condition and were in good health. While 40.0% of the children had ordinary health, 7.6% had the worst physical state with minimal clinical characteristics, and eight instances had no apparent cause. On the other hand, diarrhea and decreased appetite are the most common issues, reported by 131 respondents overall. Finally, stronger preventive measures and greater community awareness can lessen malnutrition intensity and prevalence in that area of Bangladesh.

Introduction

Dietary habits, maternal health, care practices, and other supportive surroundings, such as the socioeconomic state of the home, all interact intricately to affect the child's nutritional status [1]. Since child nutritional status serves as a stand-in for population health status, it is crucial to community nutrition. Both under-nutrition and over-nutrition are implied by the term malnutrition [2]. Early-life malnutrition has a negative impact on children's growth and development and is a significant risk factor for several diseases, both communicable and non-communicable [3]. As a result, it is crucial in predicting later-life health and illness [4]. Additionally, 3.5 million children worldwide die from malnutrition [5]. Malnutrition in children is currently a significant global public health concern. In 2020, there will be around 149 million stunted children, 40 million overweight children, and 49 million wasting children worldwide [6]. Nonetheless, under-nutrition is very common in Africa and Asia [7]. While undernutrition is seen as a major public health issue in low- and middle-income

nations, changes in lifestyle and nutrition transition are also linked to a notable rise in the prevalence of over-nutrition [8-10]. Among the factors that contribute to this problem are poverty, low birth weight, intrauterine growth restriction, poor nutrition for expectant mothers, insufficient supplemental feeding, poor water quality, recurrent virus infections, and food insecurity in the family. Primary acute malnutrition is therefore complicated and largely social rather than biological. The condition known as "environmental enteropathy," which raises the risk of acute malnutrition in children, is increasingly thought to be caused by poor sanitation, hygiene, and water quality [11].

In Bangladesh, undernutrition remains a serious public health concern. The percentage of women and children under five who are overweight is increasing, yet over-nutrition is still not a significant problem. Anemia affects 43.0% of children aged six months to five years [11], severe acute malnutrition affects 600,000 children [12], and 35.0% of the population still experiences food insecurity. It is also crucial to look closely at how different eating patterns, morbidity, childcare and feeding practices, access to healthcare, environmental factors, and social contexts affect malnutrition [13]. The interest in this study, which attempts to look at the prevalence of malnutrition in children, stems from data on severe malnutrition in Bangladesh.

Materials and methods

Study design: From November to December 2024, this questionnaire, descriptive study was carried out in the Narayanganj region of Bangladesh. The study included important medical records and daily activities of children aged one to ten who had malnutrition-related problems.

Data collection: All the information was collected from their parents and questions were asked to their parents with consent. All the 210 children's age, sex, health status, common diseases, and educational attainment were among the data gathered from their parents.

Ethical consideration: The parents of the children gave their informed agreement, and their private information must be kept confidential.

Data analysis: Microsoft Excel software was used to analyze all of the data and tabulated it.

Results and discussion

The following represents the demographic characteristics, nutritional status, body mass index (BMI), and medical history that were gathered. According to this study, there were slightly more girls than boys, and they ranged in age from one to ten. As seen in (**Table 1**), almost 62.9% of the children were from rural areas, whereas 37.1% were from town areas and 52.6% of parents were educated according to their interpretation. Analyzing the children's weight revealed that, as indicated in (**Table 2**), 49 of them are underweight, 139 have a suitable BMI, and 22 are heavyweight, with a BMI greater than 23. The majority of kids experience physical issues at some point in their lives. Of all the children, 48.6% were in excellent physical condition and were in good health. While 40.0% of the children had ordinary health, 7.6% had the worst physical state with minimal clinical characteristics, and eight instances had no apparent cause, as shown in (**Table 3**). The majority of kids occasionally get various illnesses and need to consult a doctor for treatment. Fever is the least prevalent cause, accounting for ten cases, whereas diarrhea and decreased appetite are the most common issues, reported by 131 respondents overall (**Table 4**).

A child's nutritional status has a significant impact on their immune system. Children who are malnourished are more susceptible to infection because of weakened immune systems, which raises their mortality risk [4]. However, the main causes of undernutrition in children under five include frequent bouts of diarrheal illness, inadequate health-seeking behavior, and immunization practices. Furthermore, poor nutrition and hygiene practices contributed to the prevalence and length of infectious diseases [14].

Table 1: Socio-demographic characteristics of children and parents

Variable	Parameter	Frequency	Percentage
Gender	Boys	98	46.67
	Girl	112	53.33
Age (years)	1-3	44	20.95
	4-7	110	52.38
	8-10	56	26.67
Residence	Urban	78	37.14
	Rural	132	62.85
Parents education	Educated	72	52.55
	Uneducated	65	47.44

Table 2: Calculated body mass index of selected children

Variable	Parameter BMI (Kg/m^2)	Frequency
Underweight	< 18	49
Moderate	18 to 23	139
Overweight	> 23	22

Table 3: Physical health condition of children

Variable	Frequency	Percentage
Good physical health	102	48.57
Average physical health	84	40.00
Bad physical health	16	07.60
No clear indication	8	03.80

Table 4: Types of diseases that children commonly acquire

Disease	Frequency	Percentage
Diarrhea	60	28.50
Dysentery	24	11.40
Cough	45	21.40
Fever	10	04.76
Decreased appetite	71	33.80

Bangladesh's under-nutrition rate is still high despite significant progress. There is also a noticeable rise in childhood overweight, which is consistent with undernutrition. Our study's estimated prevalence of childhood malnutrition, with the exception of overweight, was lower than national estimates. As a result, younger children were more likely to be underweight and waste [15]. Acute malnutrition can be considerably increased in children with respiratory diseases because they either prefer to avoid eating or eat less frequently and in bigger quantities. Children in households with one child under five years old were more likely to suffer from significant weight loss than children in households with multiple children. These children might only be nursed or given the incorrect kind of nutrients. Due to their young marriages, their mothers may be inexperienced adolescent mothers, and the majority of these mothers are unaware of the right food, vitamins, and techniques for growing children. Even though malnutrition poses a health risk to under-five children, it is evident from both past and present research that prenatal factors, such as the mother's age at birth, the time before the baby is born, and the mother's access to proper prenatal care, have a significant impact on the physical condition of the infant and, subsequently, its nutritional status [16]. For a baby to be healthy and fed, those areas require extra attention. Long birth intervals are recommended by previous research for safe motherhood and newborn health; at least four prenatal care visits are necessary for the mother's and the baby's well-being [17].

Malnutrition is also caused by bigger families, which is a population issue. This is because higher parity results in both live babies and malnourished births, as evidenced by the link between malnutrition and birth order. Another reason could be that, in comparison to small families, it is more difficult to maintain appropriate health and food consumption in large families. In Bangladesh, prolonged nursing is common, but the contrary

is also observed [18]. To improve mothers' health and their children's nutrition, interventions should focus on educating and supporting mothers and household heads about locally available, affordable, and nutrient-dense foods, prenatal care with hospital delivery, childcare, including feeding, immunization practices, and access to medical facilities for treatment during illness [19].

Conclusion: The study placed a strong emphasis on assessing children's overall nutritional status. According to this research, Narayanganj and other rural areas of Bangladesh continue to struggle with malnutrition. To address the issue of child malnutrition, the government, non-governmental organizations, and the community must work together. In order to lower childhood malnutrition, health communication campaigns should include a focus on feeding habits for young children.

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دراسة استبيانية حول انتشار سوء التغذية لدى الأطفال في منطقة نارايانغانج ببنغلاديش

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ملخص: يؤدي النقص النسبي أو المطلق في عنصر غذائي واحد أو أكثر إلى سوء التغذية. وهو مصدر قلق كبير للصحة العامة للأطفال دون سن العاشرة في البلدان منخفضة الدخل. تُعرف حالة نقص التغذية الناتجة عن عدم كفاية تناول البروتين أو السعرات الحرارية باسم سوء التغذية. يعاني الأطفال في البلدان النامية في كثير من الأحيان من سوء التغذية الحاد الأولي نتيجة لعدم كفاية الإمدادات الغذائية الناجمة عن عوامل اجتماعية واقتصادية وبيئية. من نوفمبر إلى ديسمبر 2024، أجريت دراسة استبيان وصفي مصممة ذاتيًا في منطقة نارايانجانج في بنغلاديش. تضمنت الدراسة جميع المعلومات ذات الصلة من والديهم حول أطفالهم الذين تتراوح أعمارهم بين سنة وعشر سنوات والذين يعانون من مشاكل متعلقة بسوء التغذية. كان 62.6٪ من الأطفال على الأكثر من المناطق الريفية، بينما كان 37.1٪ من المناطق الحضرية وكان 52.6٪ من الآباء متعلمين وفقًا لتفسيرهم. أظهر تحليل أوزان الأطفال أن 49 منهم يعانون من نقص الوزن، و139 لديهم مؤشر كتلة جسم مناسب، و22 يعانون من زيادة الوزن، حيث كان مؤشر كتلة الجسم لديهم أعلى من 48.6%، وكان الأطفال يتمتعون بلياقة بدنية ممتازة وبصحة جيدة. بينما كان 40% من الأطفال يتمتعون بصحة جيدة، كان 7.6% يعانون من أسوأ حالة بدنية مع أعراض سريرية طفيفة، ولم يكن هناك سبب واضح لثماني حالات. من ناحية أخرى، يُعد الإسهال وفقدان الشهية من أكثر المشاكل شيوعًا، وقد أبلغ عنه 131 مشاركًا. وأخيرًا، يمكن أن يؤدي اتخاذ تدابير وقائية أقوى وزيادة الوعي المجتمعي إلى الحد من شدة سوء التغذية وانتشاره في تلك المنطقة من بنغلاديش.