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RESEARCH ARTICLE

Predictors of Malnutrition among Children with Disabilities Aged 6–59 Months at Mbagathi Hospital, Kenya

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ABSTRACT

Childhood disability presents significant problems to health, development, and nutrition, particularly in low- and middle-income nations. There are more than 236 million disabled children all over the world, with a significant proportion in Sub-Saharan Africa. Disability prevalence in Kenya (11.4%) is similar to stunting (26%) and obesity (8%). Disabilities increase susceptibility to malnutrition because of feeding challenges, restricted mobility, frequent medical problems, and socio-economic factors. This study assessed the predictors of malnutrition in children with disabilities aged 6-59 months who presented themselves to Mbagathi County Referral Hospital, Nairobi. A hospital-based cross-sectional study comprising 160 children who had confirmed disabilities was conducted. The response was obtained by way of caregiver interviews, anthropometric data, and clinical data. The nutritional status was identified based on the WHO criterion of weight-for-age, height-for-age, weight-for-height, and mid-upper arm circumference (MUAC). The SPSS and Nutri-Survey were used to conduct data analysis, and chi-square and t-tests were used. Females were more likely to be severely malnourished and have oedema. Unemployment of caregivers (AOR=3.5), physical disability, recent illness and incomplete immunization, and feeding difficulties were predictors of underweight, while tertiary education was protective (AOR=0.41). Recent illness was found to be associated with stunting (AOR=2.5), but early breastfeeding discontinuation and deworming were protective (AOR=0.29 each). Unemployment of caregivers (AOR=3.1) and illness (AOR=2.4) were linked to wasting. This study proposed the use of specialized nutrition support, caregiver training, socioeconomic empowerment, and inclusive policies in low-resource urban areas.

Keywords: *Childhood disability, Malnutrition, Predictors, Feeding challenges, Low- and middle-income countries (LMICs)*

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INTRODUCTION

Childhood disability is a major global public health and development concern, significantly affecting physical growth, cognitive outcomes, and overall quality of life (UNICEF, 2021). The nutritional well-being of children is intricately linked to disability status, household socioeconomic conditions, and access to inclusive healthcare and social support systems (Lu, Black, & Richter, 2016; WHO, 2023). Globally, the burden is enormous, with one estimate indicating more than 2.2 billion people living with vision impairment alone, highlighting a magnitude of disability that falls disproportionately on low- and middle-income countries (WHO, 2020). Evidence shows that children with disabilities face substantially higher risks of malnutrition, including underweight, stunting, and wasting, than their peers without disabilities (Ajayi, Ayenimowo, & Ajibare, 2022; Groce et al., 2014). This disparity is largely due to biological vulnerabilities, feeding difficulties, and pervasive environmental deprivation, with disability itself strongly correlating with poverty in LMICs (Banks, Kuper, & Polack, 2017; WHO, 2023). Limited socioeconomic resources, food insecurity, and reduced access to rehabilitative and nutrition services further exacerbate this vulnerability (Lu, Black, & Richter, 2016). The situation is severely compounded by the cycle of recurrent infection and inadequate disease management, which heightens nutrient loss and suppresses appetite (Sinha et al., 2023). Additionally, biological factors such as low birth weight, preterm delivery, and chronic illness conditions commonly associated with disability significantly increase the risk of growth faltering and undernutrition (Ajayi, Ayenimowo, & Ajibare, 2022; Centers for Disease Control and Prevention [CDC], 2022). These intersecting determinants reinforce the need for integrated health, education, and social protection systems to address the severe nutritional inequities faced by children with disabilities worldwide (Lu, Black, & Richter, 2016; UNICEF, 2021).

Disability and malnutrition persist as significant public health challenges in Kenya. Although nationally representative data on childhood disability remain limited, emerging research provides important insights. For example, Kamen et al. (2023) estimate that nearly 10% of children under the age of five may have developmental disabilities, while Neville et al. (2025) found that about 13% of a sample of reunited children had disabilities. Nationally, census data indicate that approximately 2.2% of Kenyans aged five years and older live with some form of disability (UNICEF Kenya, 2024).

With regard to nutrition, recent studies highlight regional disparities in child undernutrition across Africa. Globally, 45.4 million children under five were affected by wasting in 2020. While the prevalence of wasting among children in Africa declined slightly from 7.1% in 2010 to 6.9% in 2021, these aggregate data mask significant variation across countries. Several nations—such as Chad, South Sudan, and Niger, continue to record wasting rates above the World Health Organization's "critical" threshold of 15%, largely due to conflict, climate shocks, and poor access to health and nutrition services (Tamir et al., 2025).

Meanwhile, childhood obesity is emerging as an additional concern. In sub-Saharan Africa, approximately 5.1% of children under five are overweight or obese (Alemu et al., 2022). Within Nairobi, about 12% of under-five children are stunted, while nearly 6% are overweight or obese, illustrating both under- and over-nutrition concerns (Republic of Kenya, 2024). These challenges are particularly acute in informal settlements, where food insecurity is intensified by rapid urbanization and economic hardship.

Recent evidence underscores that childhood disability and malnutrition are closely intertwined, though the relationship varies depending on the child's physical, environmental, and social circumstances. Children with disabilities are significantly more likely to experience undernutrition—manifesting as stunting, wasting, and low body weight than their non-disabled peers (Kuper et al., 2022; Tamir et al., 2025). However, overnutrition, including overweight and obesity, is also increasingly reported among children with intellectual or developmental disabilities due to limited mobility and inactivity (Rimmer et al., 2023; Guo et al., 2023).

Feeding challenges are central to this problem. Children with autism spectrum disorder and other developmental disabilities frequently exhibit feeding problems such as difficulty swallowing, sensory aversion, and food selectivity, which can result in insufficient nutrient intake and poor growth outcomes (Chistol et al., 2022; Dharmaraj et al., 2023). Children with severe motor impairments may further require tube feeding, which complicates nutritional adequacy and energy estimation (Sabbagh et al., 2020).

The predictors of nutritional outcomes among children with disabilities are multifactorial. Biological factors such as age, sex, metabolic rate, and genetic profile affect nutrient requirements (Kuper et al., 2022). Environmental determinants, including food availability, clean water, and sanitation, remain essential in maintaining proper nutrition (UNICEF, 2023). Socioeconomic

factors such as household income, caregiver education, and access to healthcare services strongly influence dietary quality and food security (Moges et al., 2023). Additionally, lifestyle and feeding practices including breastfeeding patterns, diet diversity, and physical activity, shape the overall nutritional well-being of children with disabilities (Dharmaraj et al., 2023). This study, therefore, examines the predictors of malnutrition among children aged 6–59 months with a disability attending Mbagathi County Referral Hospital in Nairobi, Kenya.

METHODS

Study Design

The current study employed a cross-sectional design (Setia, 2016). This enabled data collection at a single point in time to determine the prevalence and socio-demographics, dietary habits, and nutritional status of children with disabilities (6-59 months) in Mbagathi County Referral Hospital, Nairobi. The design allowed the consideration of associations and many factors at the same time.

Study Location

It was carried out in Mbagathi County Referral Hospital, Nairobi (lat. -1.3088, long. 36.8039). It had a population of approximately 3.1 million with 22 living under the poverty line and 2000 patients per annum being hospitalized (CHAIN Network, 2023). It offered a wide range of cultural representation and sufficient access to children with disabilities, which is why it was the right research location.

Study Population

The study was carried out on children aged between 6-59 months with established disabilities like cerebral palsy, intellectual disabilities, and visual or hearing impairment, Down syndrome, autism, muscular dystrophy, and spina bifida as per UNICEF (2014). They were either under general care or they were admitted at Mbagathi County Referral Hospital at the time of the study. The children who had informed consent given by their parents or legal guardians were only included. Children who did not have a confirmed case of a disability, who were severely ill or bedridden and had no guardian to give the consent and the children who had participated in other clinical trials were excluded.

Sample Size

The sample size was determined at 156 using the Fisher formula (Mugenda and Mugenda, 2003) and then modified to 145 representing finite population and 10 representing non-response and gave a sample of 160 children.

Pretest: A pilot pretest was conducted at Mama Lucy Kibaki Hospital on 10 participants from the sample (n=16) to optimize the research tools. Reliability was evaluated using the test–retest method and Cronbach's alpha, with a threshold of greater than 0.7 considered acceptable. Validity was established through expert review, factor analysis, and feedback from participants to ensure accuracy and consistency of the instruments.

Data Collection Instruments and Procedures

The data collection process commenced upon receiving the relevant approvals. Research assistants were recruited and trained to undertake standardized procedures in the administration of questionnaires, anthropometric measurements, clinical assessment, and ethical communication with participants and Hospital personnel were invested and trained in health sciences and research methods background.

Children aged between 6-59 months were selected, confirmed to have disabilities, and identified with the help of hospital medical records at Mbagathi County Referral Hospital. Parents and caregivers were informed with regard to the aim, advantages, risks, and other ethical concerns in the study, and informed consent was taken. A semi-structured questionnaire was used to collect the data regarding socio-demographic and background data on caregivers. Anthropometry measurements were made according to the WHO standards, such as weight, height, and head circumference. The 24-hour dietary recall and a Food Frequency Questionnaire (FFQ) were used to evaluate dietary intake and feeding patterns. Clinical investigations were done to detect the evidence of malnutrition and feeding problems, and the medical history of the child, its diagnosis, and medications were studied in the medical records. All ethical considerations were adequately considered, and all questionnaires that were completed were stored in a secure location, and only the principal investigator could access the data and verify the compliance with the study protocols and the integrity of the data.

Data Analysis

The data obtained was analysed in SPSS and Nutri-Survey software. Weight-for-age, height-for-age, weight-for-height, and mid-upper arm Circumference (MUAC) were calculated in z-scores using the World Health Organization (WHO) Child Growth Standards. Clinical signs of malnutrition were grouped to determine the nutritional status, as stunted, underweight, wasted, or normal. The key characteristics of the study population were summarized using descriptive statistics, in terms of means, frequencies, and percentages. Chi-square tests and

t-tests will be used in a bivariate analysis to test the association between nutritional status and possible determinants.

Ethical Considerations

The following ethical standards were followed in this study. The study was approved by the Kabarak University Institute of Postgraduate Studies, Kabarak University Scientific and Ethics Review Committee- KUSERC-(KUREC-040425 and the National Commission of Science, Technology and Innovation NACOSTI-(NACOSTI/P/25/4173783). Parental or guardian informed consent was received. After five years of storage in encrypted files and locked cabinets that could only be accessed by authorized personnel, data were collected, de-identified confidentially, coded, and stored safely before destruction. Trained help was used to guarantee quality by the use of standardized questionnaires and proper anthropometric measurements. The participation was voluntary, and they could leave at any point in time without a fine. There was no disclosure of confidentiality or non-discrimination, and no data were given to third parties without permission. Accurate reporting of findings was done via academic and community dissemination.

RESULTS

Predictors of Underweight

The protective effect of higher education was to reduce the odds of a child of a caregiver being underweight compared to no formal education (AOR = 0.41; 95% CI: 0.20-0.85; p = 0.005). The odds were more than triple of business-employed caregivers (AOR = 3.51; 95% CI: 1.15-10.75; p = 0.031). Disability type was also important: underweight children had a higher likelihood of having a physical disability compared with intellectual disability (AOR = 2.74; 95% CI: 1.18-6.38; p = 0.003). The recent illness further increased the odds (AOR = 2.74; 95 percent CI: 1.18-6.38; p = 0.003). The absence of complete immunization was a risk factor (AOR = 0.29; 95% CI: 0.11-0.79; p = 0.045). Underweight was strongly predicted by feeding difficulties: lack of assistance (AOR = 3.66; 95% CI: 1.29-10.37; p = 0.014), food refusal (AOR = 2.95; 95% CI: 1.40-6.21; p = 0.004), poor appetite (AOR = 3.21; 95% CI: 1.56-6.61; p = 0. Other factors, such as the demographics of caregivers, the income of the household, the sex of children, the frequency of meals, and the diversity of diet, were insignificant. The results emphasize the unique interaction between socioeconomic, health, and feeding factors and the underweight of children. (Table 1).

Table 1:
Predictors of Underweight among Children 6-59 Months with Disabilities

Predictor	Category/Level	COR (95% CI)	AOR (95% CI)	p-value
Caregiver age	19–25 years			
	26–35 years	1.24 (0.46–3.31)	1.03 (0.37–2.84)	0.959
	36–45 years	1.50 (0.50–4.50)	1.26 (0.41–3.86)	0.680
	≥46 years	0.625 (0.12–3.28)	0.72 (0.12–4.29)	0.715
Caregiver marital status	Married	Ref		
	Single	1.20(0.55–2.62)	1.10(0.47–2.56)	0.820
	Divorced/Separated	0.42(0.13–1.37)	0.44 (0.13–1.47)	0.180
	Widow	0.00(0.00–1.00)	0.00 (0.00–1.00)	0.999
Caregiver education	Formal education	Ref		
	Primary	0.82(0.26-2.57)	0.87(0.266-2.86)	0.815
	Secondary	0.66(0.21-2.07)	0.72(0.22-2.37)	0.587
	Tertiary	0.34(0.18-0.64)	0.41 (0.20–0.85)	0.005*
Caregiver occupation	Business/trader	Ref		
	Unemployed	3.32(1.12-9.78)	3.51(1.15-10.75)	0.031*
	Casual laborer	1.41(0.58-3.42)	1.55(0.61-3.95)	0.361
	Formal employment	0.81(()0.31-2.11)	0.89(0.32-2.46)	0.822
	Retired with pension	0.66(0.07-66.32)	0.69(0.07-7.02)	0.749
	Farmer	1.21(0.32-4.55)	1.33(0.34-5.17)	0.681

Type of disability	Intellectual	Ref		-
	Physical	2.96 (1.34–6.57)	2.74 (1.18–6.38)	0.003*
	Sensory	1.02 (0.19–5.45)	1.08 (0.19–6.12)	0.926
	Multiple	1.56 (0.14–17.40)	1.68 (0.14–19.35)	0.681
	Psychosocial	1.23 (0.10–15.58)	1.29 (0.10–16.71)	0.857
Household income (Ksh)	<10,000 KES	Ref		
	10,001–20,000	1.12 (0.39–3.24)	1.09 (0.36–3.30)	0.874
	20,001–30,000	1.15 (0.41–3.26)	1.05 (0.36–3.07)	0.923
	30,001–40,000	0.65 (0.19–2.26)	**0.61 (0.17–2.21)**	**0.452**
	40,001–50,000	0.42 (0.10–1.83)	0.39 (0.09–1.77)	0.222
	>50,000	0.00 (0.00–1.00)	0.00 (0.00–1.00)	0.999
Child gender	Male	1.201 (0.542–2.661)	1.178 (0.512–2.709)	0.700
	Female			
Recent illness (past 2 weeks)	No	Ref		-
	Yes	2.96 (1.34–6.57)	2.74 (1.18–6.38)	0.003*
Immunization status	Incomplete	Ref		-
	Complete	0.31 (0.12–0.81)	0.29 (0.11–0.79)	0.045*
Feeding assistance	Yes	Ref		
	No	3.68 (1.27–10.64)	3.66 (1.29–10.37)	0.014*
Food Refusal	No	Ref		
	Yes	3.05 (1.49–6.25)	2.95 (1.40–6.21)	0.004*
Poor Appetite	No	Ref		
	Yes	3.34 (1.65–6.78)	3.21 (1.56–6.61)	0.001*
Difficulty Swallowing	No	Ref		
	Yes	3.16 (1.62–6.14)	2.90 (1.52–5.54)	0.001*
Meal frequency	≥4 times	Ref		
	<4 times	1.56 (0.67–3.61)	1.61 (0.68–3.82)	0.279
Dietary diversity score	High (≥5)	Ref		
	Moderate (3–4)	1.85 (0.16–21.09)	1.70 (0.15–18.98)	0.67
	Low (0–2)	2.12 (0.56–8.06)	1.98 (0.52–7.59)	0.314

** Statistically significant (p-value <0.05)*

Predictors of Stunting

The children with caregivers who stopped breastfeeding due to social and not due to medical reasons were more likely to be stunted (AOR = 2.57, 95% CI: 1.11-5.96, p = 0.028). Morbidity also increased the chances of stunting by two folds (AOR = 2.53, 95% CI: 1.09-5.83, p = 0.030). Deworming in the last six months was protective and dewormed children were less likely to have stunting (AOR = 0.29, 95% CI: 0.13-0.65, p = 0.003). There were trends towards lower and higher odds of stunting with education and child age respectively, but neither was statistically significant. (Table 2).

Table 2:
Predictors of Stunting among Children 6-59 Months with Disabilities

Variable	Category	COR (95% CI)	AOR (95% CI)	p-value
Caregiver Age	19–25 years	Ref	Ref	—
	26–35 years	1.236 (0.462–3.306)	1.027 (0.372–2.837)	0.959
	36–45 years	1.500 (0.500–4.500)	1.263 (0.414–3.858)	0.680
Caregiver Education	No formal	Ref	Ref	—
	Primary	0.894 (0.304–2.630)	0.740 (0.236–2.316)	0.602
	Secondary+ tertiary	0.612 (0.210–1.783)	0.486 (0.153–1.541)	0.221
Reason for stopping Breastfeeding	Medical reason	Ref	Ref	—
	Social reason	2.717 (1.220–6.048)	2.568 (1.106–5.964)	0.028*
Recent Illness (2 weeks)	No	Ref	**Ref**	**—**
	Yes	2.328 (1.040–5.214)	2.525 (1.094–5.829)	0.030*
Dewormed (past 6 Months)	No	Ref	Ref	—
	Yes	0.340 (0.157–0.735)	0.287 (0.127–0.648)	0.003*
Child Age	6–11 months	Ref	Ref	—
	12–23 months	1.429 (0.456–4.475)	1.271 (0.380–4.255)	0.697
	24–35 months	1.800 (0.523–6.193)	1.479 (0.396–5.520)	0.561
	36–59 months	2.154 (0.697–6.654)	1.915 (0.542–6.767)	0.311

**Statistically significant (p-value <0.05)*

Predictors of Wasting

Wasted children were more likely to have been ill in the preceding two weeks as compared to those who had not (AOR = 2.41, 95% CI: 1.01-5.77, p = 0.048). This leads to the contribution of acute illness to producing malnutrition. Education of caregivers also played a role: children of caregivers with a tertiary education were less likely to waste than their counterparts who did not have any schooling (AOR = 0.21, 95% CI: 0.06-0.74, p = 0.015), implying that education is protective. Another determinant was employment status. The risk of wasting among children who had unemployed caregivers were three times greater than that among children who had caregivers in business or self-employment (AOR = 3.08, 95% CI: 1.11-8.56, p = 0.031). The assistance with feeding was seen to be protective (AOR = 0.29, 95% CI: 0.08-1.06), but this was not statistically significant (p = 0.061). Others, e.g., caregiver age, marital status, gender, meal frequency, and diversity of diet, were not significant. In general, recent illness, caregiver education, and employment became the strongest determinants of wasting.

Table 3:
Predictors of Wasting among Children 6-59 Months with Disabilities

Variable	Category	COR (95% CI)	AOR (95% CI)	p-value
Caregiver Age	19–25	Ref		-
	26–35	1.18 (0.41–3.38)	**1.05 (0.34–3.23)**	**0.939**
	36–45	1.42 (0.45–4.45)	1.26 (0.39–4.10)	0.705
	≥46	0.57 (0.10–3.15)	0.50 (0.08–3.17)	0.463
Caregiver Gender	Male	Ref		-
	Female	0.79 (0.36–1.75)	0.83 (0.35–1.95)	0.666
Marital Status	Married	Ref		-
	Single	1.12 (0.50–2.49)	1.08 (0.45–2.58)	0.866
	Divorced/Separated	0.52 (0.16–1.66)	0.55 (0.16–1.82)	0.323
	Widow	0.00 (0.00–1.00)	0.00 (0.00–1.00)	0.999

Caregiver Education	No formal	Ref		-
	Primary	0.90 (0.28–2.93)	**0.78 (0.22–2.79)**	**0.704**
	Secondary	0.70 (0.23–2.17)	0.58 (0.18–1.90)	0.371
	Tertiary	0.25 (0.08–0.81)	0.21 (0.06–0.74)	0.015*
Caregiver Occupation	Business	Ref		-
	Unemployed	3.12 (1.12–8.71)	3.08 (1.11–8.56)	0.031*
	Formal employment	0.84 (0.29–2.42)	0.79 (0.27–2.34)	0.67
	Casual laborer	1.46 (0.55–3.89)	1.37 (0.51–3.68)	0.531
Meal Frequency	<4 meals	Ref		-
	≥4 meals	0.55 (0.22–1.41)	0.59 (0.22–1.61)	0.302
Dietary Diversity Score	Low (0–2)	Ref		-
	Moderate (3–4)	0.81 (0.07–9.34)	0.79 (0.06–10.07)	0.857
	High (≥5)	0.61 (0.18–2.07)	0.58 (0.16–2.17)	0.421
Feeding Assistance	No	Ref		-
	Yes	0.27 (0.08–0.96)	0.29 (0.08–1.06)	0.061
Recent Illness (2 weeks)	No	Ref		-
	Yes	2.26 (1.00–5.12)	2.41 (1.01–5.77)	0.048*

**Statistically significant (p-value <0.05)*

DISCUSSION

Extensive research underscores that the demographic and socio-economic background of primary caregivers plays a decisive role in determining the nutritional and health status of children with disabilities (Kimani-Murage et al., 2024; UNICEF, 2023). Evidence from Kenya, particularly the Support Needs Assessment Report (KNBS, 2023), reveals that most caregivers are women with limited formal education and considerable support needs, factors that adversely affect child well-being. Similarly, Mutua et al. (2021) found that nearly 90% of caregivers of children with disabilities were women, many possessing only primary or lower secondary education, with some living with disabilities themselves.

This pattern persists even in urban contexts. Studies in Nairobi's informal settlements, such as Kasarani Sub-County, have shown that caregivers encounter substantial socio-economic barriers that limit their capacity to provide adequate care (Ngacha et al., 2024). These findings reflect a broader national reality in which caregiving responsibilities disproportionately fall on women, often leading to social isolation and economic hardship due to limited employment opportunities (KNBS, 2023; Ngacha et al., 2024). Consequently, caregivers' ability to access essential social and health services for their children is undermined by poverty and a lack of structured support systems (Ngacha et al., 2024).

These findings align with global literature indicating that low caregiver education, single motherhood, and poor socio-economic status are major determinants of poor nutritional outcomes among children with disabilities (Kimani-Murage et al., 2024; UNICEF, 2023). Thus, caregiver age, gender, education level, disability status, and household economic conditions collectively emerge as core predictors of child nutritional well-being (KNBS, 2023; Mutua et al., 2021; Ngacha et al., 2024; UNICEF, 2023).

Socio-economic vulnerability remains a major determinant of child nutrition and health outcomes, particularly in low- and middle-income countries (LMICs), where poverty limits access to diverse and nutritious diets (Lu, Black, & Richter, 2016). Broader economic instability, often resulting from social disruption or conflict, has been shown to worsen child development and mental health outcomes (Betancourt & Khan, 2008). The interplay between economic deprivation and poor nutrition, therefore, amplifies risks of developmental delay and poor health (Lu et al., 2016).

Biological and environmental factors further compound this vulnerability. Children with disabilities are at elevated risk due to prenatal and perinatal complications such as low birth weight and prematurity, both of which are established predictors of developmental challenges and undernutrition (Ajayi, Ayenimowo, & Ajibare, 2022). Moreover, the persistent cycle of infection and malnutrition common in resource-limited settings intensifies nutritional deficits (Sinha et al., 2023). For instance, while undernutrition indicators such as stunting and underweight have

declined in some regions, emerging trends of overweight, obesity, and micronutrient deficiencies signal a growing double burden of malnutrition (Sinha et al., 2023).

Preventive interventions such as folic acid supplementation before and during early pregnancy have proven effective in reducing congenital anomalies, thereby supporting long-term nutritional health (Centers for Disease Control and Prevention [CDC], 2022). Similarly, early detection and management of conditions like visual impairment, often neglected in vulnerable populations, are essential to improving health outcomes (World Health Organization [WHO], 2020).

Environmental conditions also play a significant role. Children living in households or communities affected by poverty, displacement, or conflict face heightened barriers to nutrition and care (Betancourt & Khan, 2008; Lu et al., 2016). Inadequate water, sanitation, and hygiene (WASH) facilities contribute to frequent infections, which in turn exacerbate malnutrition and hinder growth (Sinha et al., 2023). These structural deprivations reinforce the intergenerational cycle of poor health and limited development across LMICs (Lu et al., 2016).

Anthropometric data consistently demonstrate that children with disabilities experience more severe levels of undernutrition than their non-disabled peers (Ajayi et al., 2022). Many of these children experience growth faltering and reduced Weight-for-Age z-scores (WAZ) and Height-for-Age z-scores (HAZ), reflecting widespread underweight and stunting (Lu et al., 2016). These trends are particularly pronounced among children aged 12–59 months, during which feeding challenges and recurrent infections are common (Lu et al., 2016; Betancourt & Khan, 2008).

Globally, disability is a strong predictor of all forms of malnutrition, including stunting, wasting, and underweight, due to multifaceted risk factors such as feeding difficulties, limited mobility, and recurrent illness (Ajayi et al., 2022). For children with neurodevelopmental or intellectual disabilities, feeding problems may present as swallowing difficulties, food aversion, or sensory sensitivities, further heightening nutritional vulnerability (American Psychiatric Association, 2022). Addressing these interrelated determinants through comprehensive, caregiver-centered, and community-supported interventions is therefore critical to improving the nutritional and developmental outcomes of children with disabilities.

Conclusion

In this work, we can see that children with disabilities have an imbalanced burden of malnutrition and that the rates of wasting, underweight, and stunting are much higher than the national prevalence rates. Associations between caregiver socio-economic status, education, type of disability, recent illness, and feeding issues were significant contributors to the risk of nutrition. Although the immunization coverage and healthcare access were rather high, the weaknesses associated with poverty, chronic morbidity, insufficient feeding support, and social restraints remained. These results highlight the urgency of disability-sensitive nutrition and health interventions in urban low-resource contexts.

Recommendations

The following recommendations are proposed to address the high burden of malnutrition among children with disabilities:

1. Implement disability-sensitive nutrition programs that provide therapeutic and complementary foods tailored to the specific needs of children with different types of disabilities. These programs should emphasize dietary diversity and nutrient adequacy, especially for children with feeding challenges.
2. Develop and scale up training programs for caregivers focusing on child feeding techniques, nutrition education, and early management of feeding difficulties. Such interventions should prioritize women caregivers, who constitute the majority and often have low formal education levels.
3. Integrate disability-inclusive services into existing healthcare systems to improve access to preventive and curative care, including immunization, deworming, and regular medical check-ups. Health workers should receive training on managing children with disabilities and feeding difficulties.
4. Establish early identification and intervention programs for children with disabilities to detect low birth weight, preterm conditions, and feeding problems promptly. This will enable early nutritional and clinical management to prevent severe undernutrition.
5. Formulate and implement policies that integrate disability, nutrition, and poverty reduction strategies. Collaboration among government ministries, NGOs, and community organizations should be strengthened to ensure coordinated action.
6. Support continuous data collection and research on disability and nutrition to guide evidence-based policy formulation, intervention design, and program evaluation.

Conflict of Interest

The authors declare no conflict of interest.

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