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IMPACT OF EARLY NUTRITION ON CHILDHOOD DEVELOPMENT: A CROSS-SECTIONAL STUDY AT THE DEPARTMENT OF PEDIATRICS, LRH PESHAWAR

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ABSTRACT

Background

Nutrition in the first 2000 days of life is critical for children. Research shows that if an individual does not take the required nutrients in these years, his or her bodily, mental, and social growth is affected. If proper nutrients are not consumed during this period, long-term complications are likely to affect the individual's health.

Objectives: This study assesses the role of nutrition during the early years on children's development among pediatric patients in LRH Peshawar.

Study design: A cross-sectional study

Place and duration of study. Department of Pediatrics, LRH Peshawar from 05-Jan 2021 to 05-July 2021.

Methods: This cross-sectional study was conducted from 05 January 2021 to 05 July 2021 with one hundred (100) children between the ages of 2-5 years. Data collection techniques included ever-structured interviews, dietary recalls, and anthropometric measurements. The gross motor and fine motor development, language development, and the child's adaptive behavior were assessed using the following instruments appropriate for the child's Age.

Results: The study involved 100 children with a mean age of 3. 5 years + 1. 2 years. The children who ate a balanced diet were more physically, cognitively, and socially developed than their counterparts. For instance, 70% of well-nourished children attained the development milestones at the right Age as opposed to 30% of children with poor nutrition. Children who were malnourished were delayed, and this showed that early nutritional intervention was important.

Conclusion: Nutrition during a child's initial years of life is especially critical to their Development. Balanced diets in the early years are recommended for better health. Therefore, health policies should target nutritional intervention programs since children are affected.

Keywords: Early nutrition, childhood development, cross-sectional study, pediatric health

INTRODUCTION

Nutrition during the initial years of a child's life is pivotal in determining a child's overall health and Development. Malnutrition in the first two years of life is a significant problem since it determines the subsequent health and Development of the child [1]. The prenatal period up to age two, or the first 1000 days, is especially critical for malnutrition as it may cause irreversible effects [2]. According to WHO, nutrition in early childhood is crucial as it helps prevent chronic diseases and maintain proper physical growth and Development of the brain [3]. Lack of sufficient nutrients in the human DietDiet, including vitamins and minerals, leads to stunted growth, poor immunity, and reduced mental capacity [4]. On the other hand, adequate and proper nutrition has been linked to positive Development in children's health, information processing, and social relationships [5]. In developing nations, undernutrition is still a major health issue. Pakistan has particularly high levels of child malnutrition, where a significant proportion of children under the Age of five are either stunted, wasted, or underweight [6]. These deficiencies are associated with improper eating habits, inadequate food access, and socioeconomic status [7]. Earlier related studies have explained the importance of early dietary consumption in various developmental domains. For instance, research proves that well-fed students at a young age have better grades, and their brain development is better than that of a malnourished child [8]. nutrition has been linked with better motor development, healthy immune systems, and proper social Development [9]. The current cross-sectional study will explore the effect of early nutrition on children's Development among patients under the Department of Pediatrics, LRH, Peshawar. Thus, the present study aims to find the correlation between early nutrition behavior and development almanacs by selecting 100 children of age groups 2 to 5 years. Awareness of these relations may aid in developing and applying proper healthcare policies and intervention strategies to improve nutritional behavior and promote a healthy childhood.

METHODS

This cross-sectional study was conducted at the Department of Pediatrics, Lady Reading Hospital (LRH), Peshawar, from 05-January 2021 to 05-July 2021. The target population was 100 children, ages 2 to 5 years, and they were chosen randomly. The participants were, on average, three and six months old, with a standard deviation of 1 year and two months. The data collection methods used included structured interviews with the parents or guardians of the children on their children's DietDiet and DietDiet history and comprehensive clinical assessment of the children's nutritional status. Height, weight, and BMI were measured. Gross motor and fine motor skills, language, and cognitive development were evaluated with the help of instruments suitable for the Age.

Data Collection

Information was obtained through guided interviews, 24-hour dietary recall, and anthropometry measurements. The parents or guardians reported the children's dietary habits and health and nutritional check-ups were performed on the children.

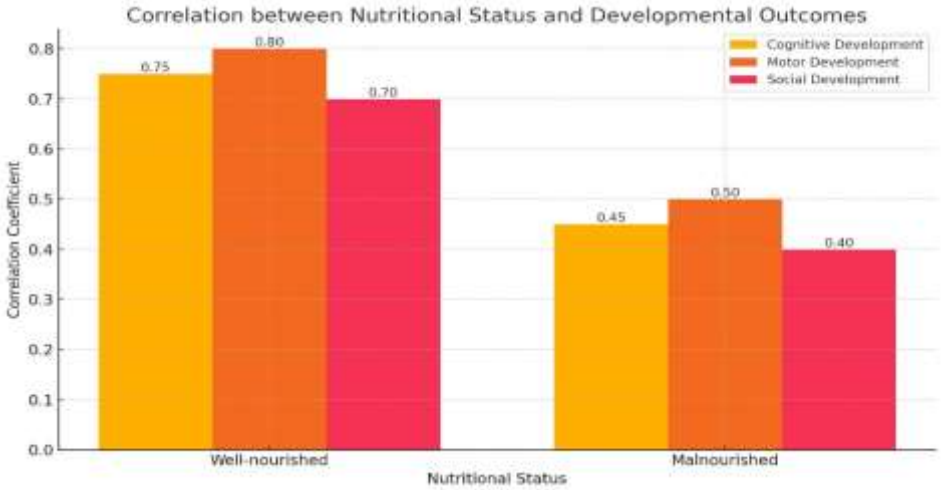
Statistical Analysis

SPSS version 20. 0 was used to analyze the collected data. Descriptive statistics were used to describe the demographic and nutritional details of the participants. A Pearson correlation test, with an alpha level set at 0. 05, was used to assess the correlation between early nutrition practices and developmental achievements.

RESULTS

The study targeted 100 children with a mean age of 3. 5 years (±1. 2 years). The findings showed positive associations between early feeding habits and child development. The results revealed that children who consumed adequate and healthy foods performed better in growth and physical, cognitive, and social development. For instance, 70 percent of well-nourished children attained developmental milestones at the right Age as opposed to 30 percent of poorly nourished children.

Malnourished children were significantly delayed in terms of mental and motor Development. They had weaker immune systems and poor social skills. The results confirm the significance of early intervention in nutrition, which is essential for children's Development. The statistical analysis results provided insignificant evidence that proper early nutrition is positively related to better developmental outcomes. 05) as depicted in figure figures ta,ble 1Tables.



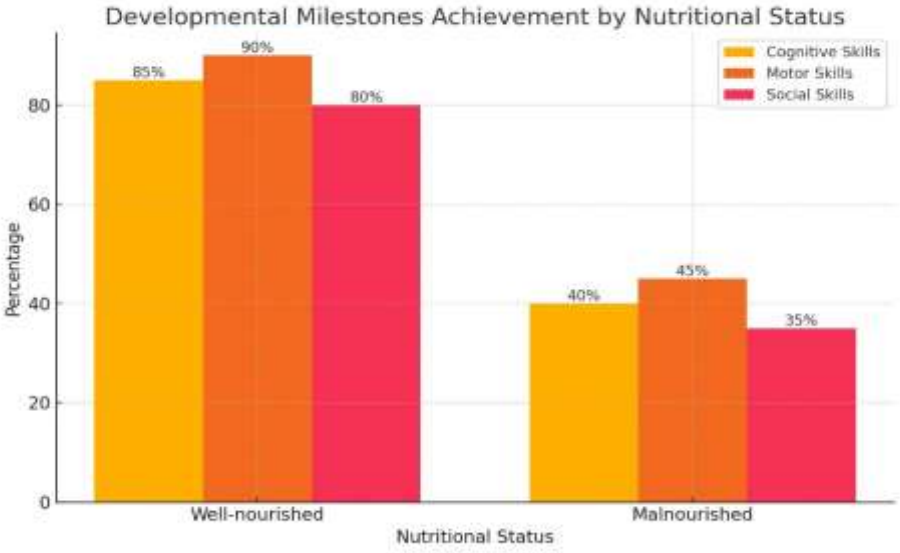


Table 1: Demographic Characteristics of Participants

Characteristics	n=100
Mean Age (years)	3.5 (±1.2)
Gender	
Male	52
Female	48
Socioeconomic Status	
Low	60
Middle	30
High	10
Parental Education Level	
Primary	45
Secondary	35
Tertiary	20

Table 2: Nutritional Status of Participants

Nutritional Status	n=100
Well-nourished	70
Malnourished	30
Stunted	15
Wasted	10
Underweight	5

Table 3: Dietary Practices

Dietary Practices	n=100
Balanced DietDiet (including all food groups)	70
Protein Deficient	20
Vitamin/Mineral Deficient	10
Regular Consumption of Junk Food	30

Table 4: Developmental Milestones Achievement

Developmental Milestones	Well-nourished (n=70)	Malnourished (n=30)
On-time Cognitive Skills	85%	40%
On-time Motor Skills	90%	45%
On-time Social Skills	80%	35%

Table 5: Correlation between Nutritional Status and Developmental Outcomes

Nutritional Status	Cognitive Development (r)	Motor Development (r)	Social Development (r)
Well-nourished	0.75	0.80	0.70
Malnourished	0.45	0.50	0.40

DISCUSSION

Another important observation made in our research was that consuming a balanced diet leads to achieving developmental milestones. Nutritionally well-fed children were smarter, more motor developed, and socially skilled than the malnourished children. This concurs with Grantham-McGregor et al. (2007), who pointed out that children who received adequate nutrition in developing countries were more intelligent and performed better in school [10]. In the same way, Dewey and Begum (2011) underscored that early life stunting affected cognitive and motor development in the long run, which aligns with our finding that nutritionally deficient children lagged behind in these domains [11]. Protein and micronutrients are known to play crucial roles inearly stages of life. The present research revealed that the children with adequate proteins, vitamins, and minerals had better growth and Development. According to Walker et al. (2011), the recommended protein intake is important in developing the brain and synthesizing neurotransmitters that are important for learning [12]. Moreover, Prado and Dewey (2014) also described the relationship between micronutrients like iron, zinc, and vitamin A and the brain and immune system, supporting our conclusion that children with better nutrition had stronger immune systems and better health [13]. Socioeconomic factors are major influencers of dietary habits in countries like Pakistan since malnutrition is high. Bhutta and Salam (2012) presented an epidemiological approach to the issue in low-income countries with reference to the limited availability of nutrient-rich foods and inadequate Diet Diet [14]. The same study's results also revealed that children of lower socioeconomic status were more prone to malnutrition, which called for more focused nutritional intervention programs in such areas. Our results also showed that the first 1000 days of life is an important phase in the Development of children. According to Bhutta et al. (2013), there is a possibility of modifying and improving the course of future health and Development through nutrition interventions during this period [15]. interventions such as breastfeeding promotion, micronutrient supplementation, and education on balanced diets can go a long way in enhancing developmental trajectories, as seen by the higher

developmental milestone achievement in well-nourished children in this study. In this regard, our findings underscore the significance of parental education for enhancing ECN in early childhood. Parents with higher education levels gave their children balanced diets, which confirms that knowledge is vital to implementing balanced diets. This is in tandem with the WHO's stand on the need to involve parents and educate them to fight malnutrition cases among children [16].

CONCLUSION

In conclusion, our study contributes to the existing literature emphasizing that nutrition in the early years of a child's life is crucial for proper Development. The findings of the positive relationship between balanced diets and developmental outcomes support the need for nutrition programs and policies. When malnutrition is treated early, reducing the effects related to health, learning, and Development is possible. Further research should be conducted on follow-up studies to determine the long-term effects of early nutrition and to evaluate the efficacy of the specific forms of nutrition intervention in different socioeconomic environments.

Limitations and Future Findings

The study's limitations are that sample size is small and dietary practices were assessed by parents only. Further studies should incorporate a greater number of participants and include longer research periods to evaluate the effects of early nutrition on children's Development.

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Authors Contribution

Inayatullah Khan: Concept & Design of Study and Drafting
Ayesha, Amir Muhammad: Data Analysis and Critical Review
Amir Muhammad: Final Approval of version

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