



ORIGINAL ARTICLE

Growth and development and their environmental and biological determinants[☆]



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KEYWORDS

Failure to thrive;
Child development;
Child health

Abstract

Objective: To investigate child growth, cognitive/language development, and their environmental and biological determinants.

Methods: This was a cross-sectional, predictive correlation study with all 92 children aged 24–36 months who attended the municipal early childhood education network in a town in the Vale do Jequitinhonha region, in 2011. The socioeconomic profile was determined using the questionnaire of the Associação Brasileira de Empresas de Pesquisa. The socio-demographic and maternal and child health profiles were created through a self-prepared questionnaire. The height-for-age indicator was selected to represent growth. Cognitive/language development was assessed through the Bayley Scale of Infant and Toddler Development. The quality of educational environments was assessed by Infant/Toddler Environment Scale; the home environment was assessed by the Home Observation for Measurement of the Environment. The neighborhood quality was determined by a self-prepared questionnaire. A multivariate linear regression analysis was performed.

Results: Families were predominantly from socioeconomic class D, with low parental education. The prevalence of stunted growth was 14.1%; cognitive and language development were below average at 28.6% and 28.3%, respectively. Educational institutions were classified as inadequate, and 69.6% of homes were classified as presenting a risk for development. Factors such as access to parks and pharmacies and perceived security received the worst score regarding neighborhood environment. Biological variables showed a greater association with growth and environmental variables with development.

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PALAVRAS-CHAVE

Insuficiência de crescimento;
Desenvolvimento infantil;
Saúde da criança

Conclusion: The results showed a high prevalence of stunting and below-average results for cognitive/language development among the participating children. Both environmental and biological factors were related to growth and development. However, biological variables showed a greater association with growth, whereas environmental variables were associated with development.

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Crescimento e desenvolvimento e seus determinantes ambientais e biológicos**Resumo**

Objetivo: Investigar o crescimento e desenvolvimento cognitivo/linguagem de crianças e seus determinantes ambientais e biológicos.

Método: Estudo transversal, correlacional preditivo, com todas as 92 crianças entre 24-36 meses, frequentadoras da rede municipal de educação infantil de uma cidade no Vale do Jequitinhonha, ano 2011. Traçou-se o perfil econômico utilizando-se o questionário da Associação Brasileira de Empresas de Pesquisa. O perfil sociodemográfico e saúde materno-infantil por questionário próprio. Elegeu-se o indicador estatura/idade para representar o crescimento. O desenvolvimento cognitivo/linguagem foi avaliado por meio do Bayley Scale of Infant and Toddler Development. Avaliou-se os ambientes educacionais pelo Infant/Toddler Environment Scale, e o ambiente domiciliar pelo Home Observation for Measurement of the Environment. Aferiu-se a qualidade da vizinhança através de questionário próprio. Foram realizadas análises de regressão linear multivariada.

Resultados: As famílias eram predominantemente da classe D com baixa escolaridade dos pais. A prevalência de déficit de estatura foi 14,1%; desenvolvimento abaixo da média na linguagem 28,6% e cognitivo 28,3%. As instituições educacionais classificaram-se como inadequadas e 69,6% dos domicílios como de risco para o desenvolvimento. Aspectos como, disponibilidade de praças e farmácias e segurança foram aspectos de pior pontuação no ambiente vizinhança. Variáveis biológicas demonstraram maior associação com o crescimento e variáveis ambientais ao desenvolvimento.

Conclusão: Observou-se elevado déficit de estatura e de resultados abaixo da média para desenvolvimento cognitivo/linguagem entre as crianças participantes. Fatores ambientais e biológicos relacionaram-se tanto ao crescimento quanto ao desenvolvimento. Entretanto, variáveis biológicas demonstraram maior associação com o crescimento e variáveis ambientais com o desenvolvimento.

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Introduction

Over the past few years, Brazil has observed a decrease in childhood mortality rates on account of measures such as immunization coverage, prenatal care, and breastfeeding promotion.¹ In this new scenario, healthcare professionals, the government, and researchers have turned their attention to the monitoring of adequate child growth and development.² Once survival is guaranteed, it is necessary to give all children the opportunity to achieve academic success and reach their full capacities as adults.³

The monitoring of child growth and development is necessary, as deficits in these parameters can have negative effects throughout life. It is estimated that, in countries where the development deficit rates affect more than 20% of their adult population, the national economy may suffer a negative impact.³ Among the negative consequences of short stature in women are losses in reproductive health, survival, and stunting of their children.^{4,5} For men, low

economic productivity has been identified as a result of short stature, originated in childhood.⁴

Child growth and development are multifactorial constructs,^{3,6} associated with environmental, socioeconomic, and biological aspects. Studies have either investigated risk factors related to child developmental delay^{3,7,8} or the risk factors associated with malnutrition.⁶ It is observed, however, that these constructs are associated and have many determinants in common. Factors associated with poverty, such as restrictions in diet, consumer goods, and services; insufficient psychosocial stimuli; and adverse perinatal conditions have been reported as risk factors for both child growth and development.^{3,5-7,9-11}

However, few studies have proposed to investigate both growth and development concurrently, which would allow for a better understanding of possibly more specific risk factors for each construct, important for the promotion of prevention and intervention strategies for both child malnutrition and developmental delay.^{2,3,7}

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