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## RESEARCH ARTICLE

# Association between time of permanence in the early education program (nurseries program) and developmental level for children in poverty situation<sup>☆</sup>



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## KEYWORDS

Early education;  
Child development;  
CDE test

## Abstract

**Background:** The nurseries program (NP) was created to support parents with 1 to 3-year-old children living in poverty situation in Mexico, and includes education and child daycare for 8 hours five days per week. The objective of this study was to evaluate the association between length of stay in the NP and the level of development in children.

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**Methods:** Cross-sectional, population-based study conducted in two Mexican states. All children aged between 12 to 48 months enrolled in NP from November 2014 to January 2015 were included. The Child Development Evaluation (CDE) test was used to screen early development. Normal early development prevalence odds ratio (OR) was calculated and adjusted for gender, impairment, and state, using as a reference those children with less than 30 days in the program.

**Results:** The study included 3,387 children from 177 NP nurseries, 53% were male; age by group was divided in 12-24 months (22.3%), 25-36 months (37.6%) and 37-42 months (40.1%). Normal development adjusted OR by age were 1.9 (CI95%: 1.30-2.78) for 6-11 months, 2.36 (95%CI: 1.60-3.50) for 12-17 months, 2.78 (95%CI: 1.65-4.65) for 18-23 months and 3.46 (95%CI: 2.13-5.60) for > 24 months. Regarding area of development, a greater probability of having a normal result for language and social areas was observed after six months in the program, and for the motor (both gross and fine) and knowledge areas after 12 months.

**Conclusion:** The length of the stay in the NP after six months significantly and progressively increases the probability of normal development regardless of gender and age.

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## PALABRAS CLAVE

Educación inicial;  
Desarrollo infantil;  
Prueba EDI

## Asociación entre el tiempo de permanencia en el Programa de Estancias Infantiles para niños en situación de pobreza y el nivel de desarrollo infantil

### Resumen

**Introducción:** El Programa de Estancias Infantiles (PEI) se enfoca en padres de niños de 1-3 años en situación de pobreza. Incluye educación y cuidado de los niños por 8 h, 5 días por semana. El objetivo del estudio fue evaluar la asociación entre el tiempo de permanencia en el PEI y el nivel de desarrollo infantil.

**Métodos:** Estudio transversal de base poblacional en dos estados de México. Se incluyeron todos los niños de 12-48 meses inscritos al PEI de noviembre de 2014 a enero de 2015. Se evaluó el nivel de desarrollo con la prueba EDI. Se calculó la razón de momios de prevalencia (RMP) para desarrollo normal por tiempo de estancia, ajustado por sexo, edad y discapacidad, teniendo como referencia a los niños que tenían < 30 días en el PEI.

**Resultados:** Se incluyeron 3387 niños de 177 estancias infantiles: 53% de sexo masculino; 22.3% de 12-24 meses, 37.6% de 25-36 meses y 40.1% de 37-42 meses de edad. El RMP ajustado para desarrollo normal fue de 1.90 (IC95%:1.30-2.78) para 6-11 meses, 2.36 (IC95%:1.60-3.50) para 12-17 meses, 2.78 (IC95%:1.65-4.65) para 18-23 meses y 3.46 (2.13-5.60) para > 24 meses. Por área de desarrollo, se observó una mayor probabilidad de desarrollo normal a partir de 6 meses de estancia para lenguaje y social, y a partir de 12 meses para motor grueso, fino y conocimiento.

**Conclusiones:** El tiempo de permanencia en el PEI a partir de 6 meses incrementa, de forma significativa y progresiva, la probabilidad de tener un desarrollo normal independiente del sexo y edad.

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## 1. Introduction

During the last decades, there has been a worldwide trend towards an increase in public investment to promote neurodevelopment of children at an early age. In this context, the goals of the United Nations for Sustainable Development 2030 set as a goal 4.2 "to ensure that all girls and boys have access to early childhood care and development services and quality early childhood education, so they are ready for primary schooling".<sup>1</sup> One reason for this objective is the recognition and dissemination of

environmental factors, such as malnutrition, lack of care and inadequate education, which are crucial for proper early childhood development (ECD).<sup>2</sup> This period, which ranges from 0 to 5 years, is of utmost importance since it is when the bases of brain architecture and structure for the formation of new cognitive, social and emotional skills are established.<sup>3</sup>

In the international context, the implementation of new government programs to boost ECD in children under five years old has proved to be cost-effective in promoting early learning and cognitive abilities and achieving an overall

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