

Effects of 6 months of permanence in an early intervention program on the developmental level of children 18-42 months of age in poverty: cohort study

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Abstract

Background: The Child Care Facilities Program (PEI, for its Spanish acronym) in Mexico targets parents of children aged 1-3 years living in poverty, providing education and care strategies 5 days a week. This study aimed to evaluate the impact of a 6-month stay in childcare centers on the developmental levels of children under 4 years old. **Methods:** A longitudinal, before-and-after study was conducted. Children aged 12-42 months enrolled in the PEI were included in the study. All participants remained in the program for 6 months from the first measurement. The overall and area-specific developmental levels were assessed using the Early Childhood Development Assessment (EDI, for its Spanish acronym) test. The percentages of developmental levels (normal, delayed, and at risk of delay) were compared between the baseline and 6-month assessments using the McNemar test. **Results:** The study included 1835 children, of whom 52% were male. The age distribution was as follows: 28.1% were 12-24 months old, 48.4% were 25-36 months old, and 23.5% were 37-42 months old. At baseline, 80.5% ($n = 1,476$) of the children were classified as having normal overall development, 16% had developmental delay, and 3.5% were at risk for delay. After 6 months, the percentage of children with normal development increased to 90.1%, while those with developmental delay and those at risk for delay decreased to 8.7% and 1.2%, respectively. Similar improvements were observed across various developmental areas, except in the knowledge area. **Conclusions:** A 6-month stay in childcare centers is beneficial for improving the developmental levels of children under 4 years old, both overall and in motor, language, social, and cognitive areas.

Keywords: Child development. Childcare centers. Educational programs. Infants. Preschoolers.

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Efectos de seis meses de permanencia en un programa de intervención temprana sobre el nivel de desarrollo de niños de 18-42 meses de edad en situación de pobreza: estudio de cohortes

Resumen

Introducción: El Programa de Estancias Infantiles (PEI) de México se enfoca a padres de niños de 1-3 años de edad en situación de pobreza, e incluye estrategias de educación y cuidado, cinco días a la semana. El objetivo de este estudio evaluar el efecto que permanecer seis meses en el PEI, sobre el nivel de desarrollo de niños menores de cuatro años. **Métodos:** Estudio longitudinal y comparativo, de antes y después. Se incluyeron niños y niñas de 12-42 meses inscritos al PEI. Todos los participantes permanecieron en el programa seis meses a partir de la primera medición. El nivel de desarrollo, global y por áreas se evaluó con la prueba Evaluación del Desarrollo Infantil (EDI). Se comparó el porcentaje de nivel de desarrollo (normal, rezago y riesgo de retraso) entre la evaluación basal con la realizada a los seis meses con la prueba McNemar. **Resultados:** Se incluyeron 1,835 niños; 52% sexo masculino, el 28.1% de 12-24 meses edad, 48.4% de 25-36 y 23.5% de 37-42. Al inicio, el 80.5% ($n = 1,476$) se clasificó con desarrollo global normal, el 16% con rezago en el desarrollo y el 3.5% con riesgo de retraso. A los seis meses después, incrementó el porcentaje con desarrollo normal a 90.1%, disminuyendo los otros dos grupos a 8.7% y 1.2%, respectivamente. Por áreas del desarrollo se encontraron resultados similares, con excepción del área de conocimiento. **Conclusiones:** La permanencia <6 en el PEI en niños <4 años es favorable para mejorar su nivel de desarrollo, tanto global como por áreas.

Palabras clave: Desarrollo infantil. Estancias infantiles. Programas educativos. Lactantes. Preescolares.

Introduction

Globally, there has been a growing increase in public investment over the years to promote neurodevelopment in young children; this policy aligns with the United Nations (UN) 2030 Sustainable Development Goals, which includes the target: “ensure that all girls and boys have access to quality early childhood development, care, and pre-primary education so that they are ready for primary education¹.”

In various countries, particularly low-income ones, one of the pillars for improving child development is early inclusion in education programs, such as kindergartens (preschool education) or institutions with trained personnel for childcare². Early age refers to the period from birth to 5 years of age; this period is critical as it establishes the foundations of brain architecture and forms the structure for developing new cognitive, social, and emotional skills³.

In the international context, numerous publications have demonstrated that the implementation of government programs to promote early childhood development (ECD) in children under 5 years of age effectively supports optimal development by improving the acquisition of cognitive skills³⁻⁵. Long-term effects observed among participants in these programs include a higher proportion of high school graduates, increased years of education, higher income levels, and reduced teenage pregnancy rates⁶. The benefits are not solely individual, as from a macroeconomic perspective, data

indicate a return of three to seven dollars for every dollar invested in these programs⁶⁻⁸.

In Mexico, although preschool education has been mandatory since 2002, by 2019, it was estimated that only 7.1% of children aged 0-35 months attended some form of childcare or early education program, while 62.4% of children aged 36-59 months attended preschool education⁹. Despite these figures, it is important to recognize that strategies targeting vulnerable populations have been implemented over the years, which directly or indirectly benefit child development. For example, in 2006, the Mexican Child Care Facilities Program (PEI, for its Spanish acronym) was created by the Ministry of Social Development (*Secretaría de Desarrollo Social*, SEDESOL) to support childcare for children between one and 3 years 11 months of age, as well as children under 6 years with disabilities. The families benefiting from this program are those where mothers, fathers, or guardians worked, sought employment or studied and were also living in poverty without access to public or private childcare facilities^{10,11}. By 2012, it was estimated that the PEI had served a total of 1.05 million children, indicating that if the program were discontinued, 34% of beneficiaries would have to leave their jobs to care for their children¹².

Since its creation, the PEI has undergone modifications based on various evaluations^{13,14}, becoming an integrated and standardized model to address children's educational and healthcare needs. In general terms,

these childcare facilities operate 8 h daily, Monday through Friday, and the attending children, besides receiving two meals per day, participate in various social, motor, cognitive, and interactive activities that promote early childhood development¹⁵.

Between 2014 and 2015, our group conducted a cross-sectional study to evaluate the association between time spent in the PEI and developmental levels in children under 5 years; the results showed that longer attendance to the PEI was associated with an increased frequency of children with normal global development (assessed using the Child Development Evaluation test [EDI, for its Spanish acronym]), as well as across developmental areas, with language and social areas showing the highest scores. Specifically, in the group with ≥ 24 months of attendance at childcare facilities, the adjusted prevalence odds ratio (POR) for achieving a normal global result was 3.46 (95% CI 2.13 - 5.60)¹⁶.

To follow-up on these initial observations, the present research aimed to evaluate the effect of PEI on the developmental level of children under 4 years of age after 6 months of attendance at childcare facilities through a longitudinal study.

Methods

This was a prospective cohort study that included all children aged 12-48 months attending PEI childcare facilities in the states of Baja California and Campeche between November 2014 and June 2015. Children who were 42 months or older at the time of the first evaluation, as they would be over 48 months at the second evaluation, and children who stopped attending childcare facilities before the second evaluation were excluded from the study.

For each participant, age, sex, attendance time at the childcare facility before the start of follow-up, and the presence of any disability were recorded. The latter was defined as any person who presents one or more physical, mental, intellectual, or sensory deficiencies due to congenital or acquired reasons, whether permanent or temporary¹¹.

Development assessment was conducted using the EDI test at the beginning of the study and 6 months later. EDI is a screening tool developed and validated in Mexico to detect developmental problems in children between 1 month and 5 years. This test has adequate sensitivity and specificity to identify developmental levels both globally and across developmental areas: fine motor, gross motor, language, social, and knowledge.

The results, both overall and by developmental area, are based on a traffic light system - green, yellow, and red - classifying each child as having normal development, developmental lag, or risk of delay, respectively^{17,18}. In the present study, results are described for motor, language, and social areas for children aged 12-48 months, while the knowledge area was only evaluated in children over 36 months; thus, for this latter area, results are only shown for the 37-48 months group ($n = 431$).

The staff responsible for each facility included in the study administered the EDI test. For proper administration, staff previously attended a training course, reinforcing learning with brief videos about the evaluation technique for each EDI item. In addition, each childcare facility had a supervisor who verified the correct application. This supervisor collected the forms completed for each participant to proceed with electronic data capture. Information was centrally consolidated, and the final database was structured. This study was part of project HIM/2013/063, approved by the Ethics and Research Committees.

Statistical analysis

For the descriptive analysis, qualitative measurement variables are presented as absolute frequencies and percentages, while quantitative variables, which did not have a normal distribution, are expressed as median and interquartile range (IQR).

For inferential analysis, Chi-square was used for comparison between groups, and McNemar's test was used to compare proportions between developmental levels before and after 6 months in the PEI. $p < 0.05$ was established as statistically significant. Analyses were performed using IBM SPSS version 27.0.

Results

Figure 1 presents the flowchart of the participant selection process; as shown, the eligible population was 2395 participants. However, 561 children did not complete the second evaluation, resulting in a total analyzed population of 1834 children for this study.

Table 1 describes the characteristics of participants at the time of the first evaluation. Of the total, slightly more than half were male ($n = 948$, 51.7%); while by age group, the majority corresponded to children aged 25-36 months (48.4%), followed by 12-24 months (28.1%), and the 37-42 months group (23.5%). It should be noted that 16 children had some form of disability (0.9%).

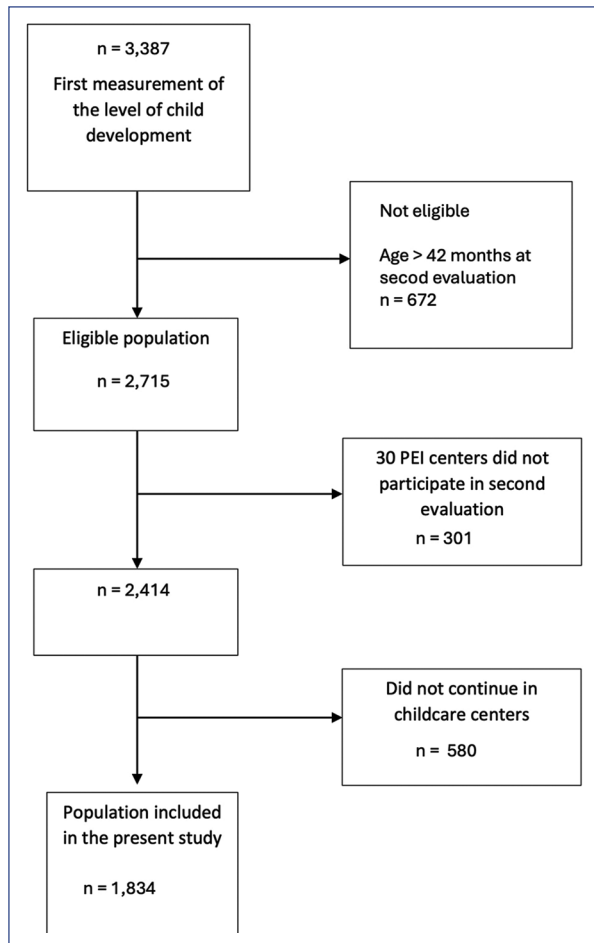


Figure 1. Flow diagram of the population included in the study, starting from the baseline measurement.

As also observed, the length of stay in childcare facilities varied, with the largest proportion having < 6 months ($n = 806$, 43.9%), compared to the smallest proportion who had ≥ 24 months ($n = 95$, 5.2%). To contrast this information, [table 2](#) presents the most relevant finding: by age group, the majority of participants were between 37 and 48 months old (48.8%).

Global development evaluation, before and after 6 months

[Table 3](#) presents the results of the global development evaluation using the EDI test, both for the baseline measurement and at 6 months. As observed, 80.5% ($n = 1,476$) were classified with normal development (green), followed by developmental lag (yellow) in 16%, and risk of delay (red) in 3.5%. While in the evaluation, 6 months later, the number of children with normal development increased to 90.1% ($n = 1,652$),

with the other two groups decreasing to 8.7% and 1.2%, respectively.

It is worth highlighting that, when analyzing the data from [table 3](#) by cohort, according to the first evaluation, there were changes in all three groups. Thus, from the normal development group, 84 (5.7%) children moved to lag and 23 (1.2%) to risk of delay. Meanwhile, of the 229 classified as yellow, the majority moved to green (77.9%), 20.1% maintained the same classification, and six children (2.0%) were classified as red. Finally, of the 64 children initially classified with risk of delay (red), in the second evaluation, half moved to green, 16 (25%) to yellow, and another 16 maintained the same classification. The percentage change between the first and second evaluations was statistically significant ($p < 0.001$).

Evaluation by developmental areas, before and after 6 months

[Figure 2](#) graphically presents (in traffic light format) the percentage change children experienced after 6 months of follow-up across the five developmental areas. The X-axis of each graph shows the total cases for each category (green, yellow, and red), while the Y-axis corresponds to the percentage by category, according to the second evaluation. As observed, there was a percentage improvement in all areas in the second evaluation for participants initially classified with developmental lag (yellow) or risk of delay (red) after 6 months of staying in the facilities. However, it should be noted that a small percentage of children were initially classified as having normal development but moved to lag in the second evaluation.

[Figure 2A](#) shows information about the gross motor area; in the first evaluation, 94.7% ($n = 1,737$) obtained a normal result, 4.9% ($n = 89$) showed developmental lag, and 0.4% ($n = 8$) showed risk of delay. For the second evaluation, 98.7% ($n = 1,714$) maintained this result in the normal development group, and 1.3% ($n = 23$) moved to developmental lag. Of the 89 participants with lag, 93.3% ($n = 83$) changed to normal, and 6.7% ($n = 6$) remained with lag ($p < 0.05$). Of the children with a risk of delay result ($n = 8$) in the first evaluation, five improved, two changed to normal status and three to developmental lag, and the last three maintained the same result.

Improvement was most notable in the fine motor area ([Fig. 2B](#)) compared to the other four areas. As shown, in the second evaluation of the 115 initially classified with developmental lag, 101 (87.8%) changed to normal, but only one case moved to risk of delay. Meanwhile,

Table 1. Characteristics of the population studied in the first evaluation (n = 1,834)

Study variables	Total n = 1,834		Distribution by age group (months)					
			12-24		25-36		37-42	
	n	(%)	n	(%)	n	(%)	n	(%)
			515	(28.1)	888	(48.4)	431	(23.5)
Sex ^a								
Male	948	(51.7)	269	(52.2)	461	(51.9)	218	(50.6)
Female	886	(48.3)	246	(47.8)	427	(48.1)	213	(49.4)
Disability ^b								
Yes	16	(0.9)	2	(0.4)	4	(0.5)	10	(2.3)
Length of time in the program at the start of the study ^c								
< 30 days	111	(6.0)	55	(10.7)	45	(5.1)	11	(2.6)
1-5 months	695	(37.9)	339	(65.8)	276	(31.1)	80	(18.6)
6-11 months	383	(20.9)	117	(22.7)	198	(22.3)	68	(15.8)
12-17 months	438	(23.9)	4	(0.8)	306	(34.5)	128	(29.7)
18-23 months	112	(6.1)	0	-	63	(7.1)	49	(11.4)
≥ 24 months	95	(5.2)	0	-	0	-	95	(22.0)

^aChi-square test for differences by sex and age p = 0.883.

^bLambda test for disability and age (years) p = 0.109.

^cKendall's Tau-b between program permanence and age 0.443; p < 0.001.

Table 2. Characteristics of the study population in the second evaluation, at 6 months

Study variables	Total n = 1,834		Distribution by age group (months)					
			12-24		25-36		37-48	
	n	(%)	n	(%)	n	(%)	n	(%)
			187	(10.2)	750	(40.9)	897	(48.8)
Sex ^a								
Male	948	(51.7)	98	(52.4)	393	(52.4)	457	(50.9)
Female	886	(48.3)	89	(47.6)	357	(47.6)	440	(49.1)
Disability ^b								
Yes	16	(0.9)	0	-	4	(0.5)	12	(1.3)
Length of stay in the childcare program ^c								
6-11 months	812	(44.3)	186	(99.5)	389	(51.9)	237	(26.4)
12-17 months	364	(19.8)	1	(0.5)	209	(27.9)	154	(17.2)
18-23 months	439	(23.9)	0	-	150	(20)	289	(32.2)
≥ 24 months	219	(11.9)	0	-	2	(0.3)	217	(24.2)

^aChi-square test for differences by sex and age p = 0.824.

^bLambda test for disability and age (years) p ≤ 0.001.

^cKendall's Tau-b between program permanence and age. p < 0.001.

all children with risk of delay result (n = 17) showed improvement, as 11 changed their result to normal, and six moved to developmental lag (p < 0.05).

In the language area, highly favorable percentage changes were also observed in the 6-month evaluation. As shown in [figure 2C](#), of the 185 children with developmental lag results, 80.5% (n = 149) changed to normal results, but 5 (2.7%) changed to risk of delay.

Meanwhile, of the 44 children initially classified with risk, 31 (70.4%) had a higher evaluation in the second assessment, 24 moved to normal, and seven to developmental lag (p < 0.05). However, we highlight that this area showed the highest percentage (3.3%) of children who, being normal at the start, moved to a lower classification in the second evaluation, as shown in [figure 2C](#).

Table 3. Comparison of global developmental evaluation results, using the child development assessment test, at baseline and after 6 months of staying in childcare facilities (n = 1,834)

Initial Result	Total, n (%)	Subsequent result					
		Green n (%)		Yellow n (%)		Red n (%)	
		1,652	(90.1)	159	(8.7)	23	(1.2)
Green	1,476 (80.5%)	1,391	(94.2)	84	(5.7)	1	(0.1)
Yellow	294 (16%)	229	(77.9)	59	(20.1)	6	(2)
Red	64 (3.5%)	32	(50)	16	(25)	16	(25)

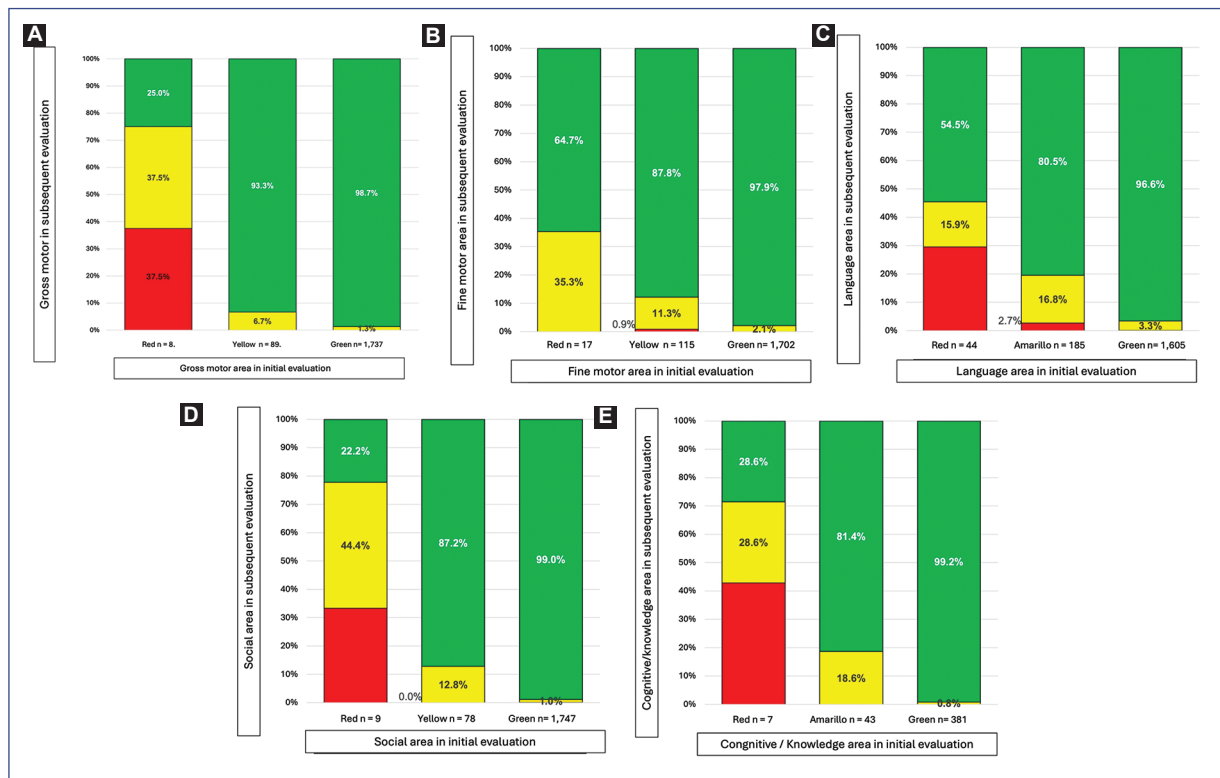


Figure 2. Comparison of baseline and subsequent results for the five evaluated developmental areas. **A:** gross motor. **B:** fine motor. **C:** language. **D:** social. **E:** knowledge/cognitive.

Regarding the social area, it was observed that of the total children with normal results (n = 1,747), in the second evaluation 17 (0.97%) were classified as having developmental lag and one (0.1%) moved to risk of developmental delay. In the case of the 78 with developmental lag, 87.2% (n = 68) changed to normal, and 12.8% (n = 10) remained with lag. Among the nine children at risk of developmental delay, the most significant improvement was observed, with four transitioning to

developmental lag and two achieving normal development, p < 0.05 (Fig. 2D).

Finally, the knowledge area showed the smallest percentage change in improvement in the risk of delay group; of the seven children initially classified in this category, only 2 (28.6%) moved to normal, 3 (42.9%) to developmental lag, and another three maintained the same result. For the 43 children with developmental lag, in the second evaluation, 81.4% (n = 35) moved to

normal, and the rest maintained the same classification, $p < 0.05$ (Fig. 2E).

Discussion

The findings of this study confirm the benefits of incorporating childcare facilities (in this study, belonging to the PEI program) for children from early life stages to promote optimal development. The different results presented showed a very significant favorable change in the percentage of children who initially did not have development considered normal after staying 6 months in these centers.

These results corroborate previous findings in which our group, through a cross-sectional study, reported that children who spend more time in childcare facilities show an increased prevalence of normal development¹⁶. However, it should be emphasized that, unlike the previous study regarding the association between longer stay and improved neurodevelopment, the prospective design of the present research provides greater validity from both methodological and causality perspectives.

It is interesting to highlight that studies evaluating child development in the general population using the EDI test¹⁹ have reported a 3.1% decrease in the proportion of children with normal development at age 3 when compared to 1-year-old children. According to the results of this study, it is possible to consider that attendance at childcare facilities could be a protective factor to prevent or improve developmental problems, similar to what has already been documented by other authors regarding the benefits of preschool education^{5,6,20}.

In 2011, an evaluation of the PEI was carried out, and a positive impact was found in personal-social and communication areas^{13,14}. The results of the present study are consistent in both developmental areas. However, it was also possible to determine that there is a positive effect on gross motor, fine motor, and cognitive areas. To understand these benefits, one should consider the different activities carried out in childcare facilities, which include interaction with children of similar ages through integration in games or during mealtimes. In addition, in these facilities, educational activities include drawing, painting, cutting, and singing, among others, together with physical activities, both individual and in group.

A notable point is what was observed in the knowledge development area, as it showed the lowest percentage of benefit; this could be due to the smaller number of children evaluated compared to other areas or because there are factors both within the facilities

and external that were not evaluated in this study. For example, children spend limited time in the facilities, with more time spent at home, so it is possible that they do not continue practicing what they learned at home, or there could be a deleterious effect of malnutrition. Therefore, further studies are necessary to determine the role of these potential confounding factors.

Furthermore, the results of this study should be interpreted with some caution, as they likely cannot be extrapolated to other populations. What seems most important to note is that the studied population corresponds to a highly vulnerable group due to their low socioeconomic status. Hence, it is recommended to conduct studies that evaluate whether the positive effect of childcare facilities on neurodevelopment is observed in other population groups without social or economic disadvantages, and even by gender.

Conclusion

A 6-month stay in childcare facilities for children under 4 years of age is favorable for improving their development level, both globally and in motor, language, social, and cognitive areas.

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Conflicts of interest

The authors declare no conflicts of interest.

Ethical considerations

Protection of human and animal subjects. The authors declare that no experiments were performed on humans or animals for this study.

Confidentiality of data. The authors declare that they have followed the protocols of their work center on the publication of patient data.

Right to privacy and informed consent. The authors have obtained the written informed consent of the patients or subjects mentioned in the article. The corresponding author has this document.

References

1. Transformar Nuestro Mundo: La Agenda 2030 Para El Desarrollo Sostenible. New York: United Nations; 2015. Available from: https://www2.ohchr.org/spanish/bodies/hrcouncil/docs/gaa.res.60.1_sp.pdf
2. Nores M, Barnett WS. Benefits of early childhood interventions across the world: (under) investing in the very young. *Econ Educ Rev.* 2010; 29:271-82.
3. Bethlehem RA, Seidlitz J, White SR, Vogel JW, Anderson KM, Adamson C, et al. Brain charts for the human lifespan. *Nature.* 2022;604:525-33.
4. Richter LM, Daelmans B, Lombardi J, Heymann-Prof J, Lopez-Boo F, Behrman-Prof JR, et al. Investing in the foundation of sustainable development: pathways to scale up for early childhood development. *Lancet.* 2016;6736:103-18.
5. Camilli G, Vargas S, Ryan S, Barnett WS. Meta-analysis of the effects of early education interventions on cognitive and social development. *Teach Coll Rec.* 2010;112:579-620.
6. Yoshikawa H, Weiland C, Brooks-Gunn J, Burchinal MR, Espinosa LM, Gromley WT, et al. Investing in our future: the evidence base on preschool education. In: *Society for Research in Child Development. United States: Wiley; 2013. p. 1-24.*
7. Jenkins JM. Early childhood development as economic development: considerations for state-level policy innovation and experimentation. *Econ Dev Q.* 2014;28:147-65.
8. Heckman JJ, Masterov DV. The productivity argument for investing in young children. *Rev Agric Econ.* 2007;29:446-93.
9. Vázquez-Salas RA, Villalobos A, Pérez-Reyes MD, Barrientos-Gutiérrez T, Hubert C. Desarrollo infantil temprano, sus determinantes y disciplina en la niñez mexicana: ensanut 2022. *Salud Publica Mex.* 2023;65:S45-54.
10. Araujo MC, López-Boo F, Puyana JM. Panorama Sobre los Servicios de Desarrollo Infantil en América Latina y el Caribe; 2013. p. 143. Available from: <https://www.iadb.org/proteccionsocial>
11. SEDESOL. Reglas de Operación del Programa de Estancias Infantiles para Apoyar a Madres Trabajadoras, Para el Ejercicio Fiscal; 2016. Available from: https://www.gob.mx/cms/uploads/attachment/file/45619/rop_2016_estancias_infantiles.pdf
12. CONEVAL. Evaluación de Procesos Del Programa de Estancias Infantiles Para Apoyar a Madres Trabajadoras 2012. Mexico City: CONEVAL; 2012.
13. Cejudo GM, Michel CL, Gerhard R. Meta evaluación del programa de estancias infantiles. México: CIDE; 2012.
14. Angeles G, Gadsden P, Galiani S, Gertler P, Herrera A, Kariger P, et al. Evaluación de impacto del programa estancias infantiles para apoyar a madres trabajadoras. *Cent Investig Evaluación Encuestas.* 2012;3:1-4.
15. Myers R, Martínez A, Delgado MA, Fernández JL, Martínez A. Desarrollo Infantil Temprano En México: diagnóstico Y Recomendaciones. Banco Interamericano de Desarrollo. División de Pretección Social y Salud; 2013. Available from: https://issuu.com/bid-sph/docs/resumen_desarrollo_infantil_en_mexico/7
16. Rizzoli-Córdoba A, Vargas-Carrillo LI, Vásquez-Ríos JR, Reyes-Morales H, Villasis-Keever MA, O'Shea-Cuevas G, et al. Asociación entre el tiempo de permanencia en el Programa de (Estancias infantiles) para niños en situación de pobreza y el nivel de desarrollo infantil. *Bol Med Hosp Infant Mex.* 2017;74:98-106.
17. Comisión Nacional de Protección Social en Salud. Manual Para La Aplicación de La Prueba Evaluación Del Desarrollo Infantil "EDI". 1st ed. Acapulco: Secretaría de Salud; 2013.
18. Rizzoli-Córdoba A, Schnaas-Arrieta L, Liendo-Vallejos S, Buenrostro-Márquez G, Romo-Pardo B, Carreón-García J, et al. Validación de un instrumento para la detección oportuna de problemas de desarrollo en menores de 5 años en México. *Bol Med Hosp Infant Mex.* 2013;70:195-208.
19. Rizzoli-Córdoba A, Martell-Valdez L, Delgado-Ginebra I, Villasis-Keever MA, Reyes-Morales H, O'Shea-Cuevas G, et al. Escrutinio poblacional del nivel de desarrollo infantil en menores de 5 años beneficiarios de PROSPERA en México. *Bol Med Hosp Infant Mex.* 2015;72:409-19.
20. Caniato RN, Alvarenga ME, Stich HL, Jansen H, Baune BT. Kindergarten attendance may reduce developmental impairments in children: results from the Bavarian pre-school morbidity survey. *Scand J Public Health.* 2010;38:580-6.