STUDY OF EARLY CHILDHOOD DEVELOPMENT AND ITS RELATIONSHIP WITH PARENTING PRACTICES IN POVERTY CONTEXTS WITHIN THE CITY OF CÓRDOBA

ESTUDO DO DESENVOLVIMENTO DA PRIMEIRA INFÂNCIA E SUA RELAÇÃO COM AS PRÁTICAS PARENTAIS EM CONTEXTOS DE POBREZA NA CIDADE DE CÓRDOBA

ESTUDIO DEL DESARROLLO INFANTIL TEMPRANO Y SU RELACIÓN CON LAS PRÁCTICAS DE CRIANZA EN CONTEXTOS DE POBREZA DE LA CIUDAD DE CÓRDOBA

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In the first years of life the foundations are laid for the development process of each person, building the learning and socialization matrices that later sustain and condition their future possibilities. In this critical and sensitive period of development, quality of the environment and early experience has been shown to be essential. From the results, it can be assumed that child development, as a complex process, is associated with adult-child interaction, mother-child communication (including variables such as singing or storytelling), and the visualization that parents have of the child in terms of autonomy.

Conceptos claves:

Key Concepts

A) What is known about the subject:

In the first years of life the foundations are laid for the development process of each person, building the learning and socialization matrices that later sustain and condition their future possibilities.

B) What does this work contribute?

From the results, it can be assumed that child development, as a complex process, is associated with adult-child interaction, mother-child communication (including variables such as singing or storytelling), and the visualization that parents have of the child in terms of autonomy.

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Resumen:

Introducción: El estudio aborda la relación entre determinantes sociales en contextos de pobreza, las prácticas de crianza y el desarrollo psicomotor de niños y niñas de 0 a 5 años de la ciudad de Córdoba. Metodología: Se aplicaron la Prueba Nacional de Pesquisa, el Instrumento de Prácticas de Crianza y el Cuestionario de Ambiente Familiar al binomio madre-niño (246 casos). Los datos fueron analizados a partir de la frecuencia de las variables categóricas y las medidas de resumen de las variables mensurables y las asociaciones se evaluaron a partir del test de chi cuadrado para variables categóricas, ANOVA y test no paramétrico para las mensurables. Se consideró un nivel de confianza del 95%. Resultados: Los niños/as presentan una estrecha relación con sus determinantes sociales y ambientales, 3 de cada 10 están en situación de riesgo para el desarrollo. Se asociaron el nivel educativo del padre (p<0,001) y la situación laboral de la madre (o padre) (p<0,001). El riesgo en la práctica de crianza resultó mayoritario en los casos en que el adulto no capta las señales del niño 16,66%; no acostumbra a interactuar con canciones, cuentos o juegos 16,66%, y no percibe ayuda para la crianza 20,73%. Los niños cuyos padres no perciben su autonomía, tienen aproximadamente dos veces más riesgo de no pasar la PRUNAPE (p<0,02, OR:1,96; IC: 1,11-3,49). Conclusión: Se puede asumir que el desarrollo, como proceso, está asociado a la interacción adulto-niño, la comunicación madre-niño/a y la visualización que los padres tienen de la autonomía del niño/a.

Palabras clave: desarrollo infantil; determinantes sociales de la salud; relaciones familiares; pobreza

Abstract:

Introduction: This study addresses the relationship between social determinants in poverty contexts, parenting practices, and the psychomotor development of children aged 0 to 5 in the city of Córdoba. Methods: The Screening for psychomotor development problems at primary care level (PRUNAPE, Prueba Nacional de Pesquisa), the Parenting Practices Instrument (Instrumento de Prácticas de Crianza), and the Family Environment Questionnaire (Cuestionario de Ambiente Familiar) were applied to the mother-child coupling (246 cases). The data were analyzed based on the frequency of the categorical variables, and the summary measures of assessable variables and associations were evaluated with the chi-squared test for categorical variables, ANOVA and non-parametric test for the assessable ones. Results: A 95% confidence level was considered. Children have a close relationship with their social and environmental determinants, the development of 3 out of 10 children is at risk. The father's educational level (p<0.001) and the mother's employment status (or father's) (p<0.001) were associated. The parenting practice risk was predominant in cases where the adult does not interpret the child's signals 16.66%; does not interact with songs, stories nor games 16.66%, and does not receive parenting help 20.73%. Children whose parents do not perceive their autonomy have approximately twice the risk of not passing the PRUNAPE (p<0.02, OR: 1.96; IC: 1.11-3.49). Conclusion: It may be assumed that the course of development, as a process, is associated with adult-child interaction, mother-child communication and the visualization that parents have of the children' autonomy.

Key words: child development; social determinants of health; family relations; poverty

Resumo

Introducão: O estudo aborda a relação entre determinantes sociais em contextos de pobreza, práticas parentais e desenvolvimento psicomotor de crianças de 0 a 5 anos na cidade de Córdoba. Metodologia: O Teste Nacional de Pesquisa, o Instrumento de Práticas Parentais e o Questionário do Ambiente Familiar foram aplicados ao binômio mãe-criança (246 casos). Os dados foram analisados com base na frequência das variáveis categóricas e nas medidas sumárias das variáveis mensuráveis e as associações foram avaliadas a partir do teste do X-quadrado para variáveis categóricas, ANOVA e teste não paramétrico para as mensuráveis. O nível de confiança considerado foi de 95%. Resultados: As crianças têm um relacionamento próximo com seus determinantes sociais e ambientais, 3 em cada 10 correm risco de desenvolvimento. Associaram-se o nível de escolaridade do pai (p <0,001) e o status de emprego da mãe (ou pai) (p <0,001). O risco na paternidade foi na maioria dos casos em que o adulto não percebe os sinais da criança 16,66%; geralmente não interage com músicas, estórias ou jogos 16,66% e não percebe ajuda para as crianças 20,73%. Aquelas cujos pais não percebem sua autonomia têm aproximadamente duas vezes a mais o risco de não passar no PRUNAPE (p <0,02, OR: 1,96; IC: 1,11-3,49). Conclusão: Pode-se supor que o curso do desenvolvimento, como processo, esteja associado à interação adulto-filho/a, à comunicação mãe-criança e à visualização que os pais têm da autonomia da criança.
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Palavras-chave: desenvolvimiento infantil; determinantes sociais da saúde; relações familiares; pobreza

INTRODUCTION

In the first years of life the foundations are laid for the development process of every person, building the learning and socialization matrices that then sustain and condition their future possibilities. It has been shown that in this critical and sensitive period of development, the quality of the environment and early experiences play a decisive role [1-5].

In this sense, parenting practices and the family environment constitute a fundamental pillar. The actions taken for the development at this stage of life will bring about better results and will be less expensive socially and individually than if it is done later in life [6, 7]. Several Latin American studies show the individual and social costs related to the postponement of child welfare, particularly in a context of child poverty [8-13]. In this parenting environment, due to the existence of psychosocial risk factors, the probable unfavorable effects on development are exacerbated [14].
Given the importance of data published in this regard [15] and based on the aforementioned, the goal of this research was to obtain systematized information about the relationship between psychomotor development, parenting practices and family environment of children aged 0 to 6 assisted at the first level of care in the municipal health system of the city of Córdoba.

METHODS

The study population was made up of children aged 0 to 6 and their families of the city of Córdoba. The sample consisted of 246 children assisted in the Well-Child Exams in the First Level Health Care Units (UPAS) of this city, during the months of September 2014 to February 2015. The study design was observational, cross-sectional.

UPAS are distributed in the six sanitary areas in which the city is divided.

The selection of UPAS was random, taking two units for each zone, as shown in **Image 1**.

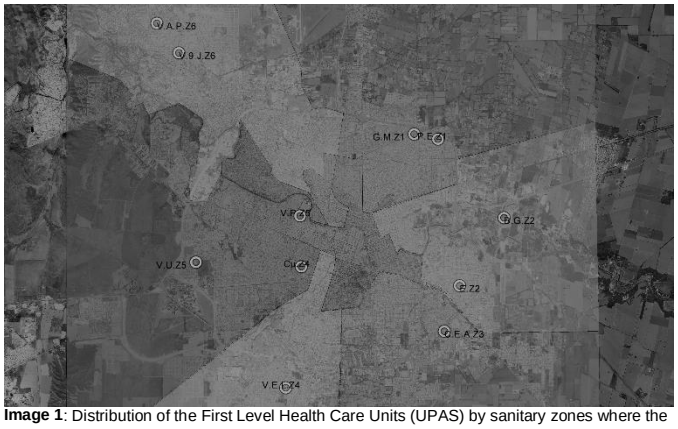

Image 1: Distribution of the First Level Health Care Units (UPAS) by sanitary zones where the study was carried out.

UPAS N° 85 - P. E neighborhood and UPAS N° 1 - G. M neighborhood. (Zone 1); UPAS N° 84 - B. G. neighborhood and UPAS N° 56 – E. neighborhood (Zone 2); UPAS N° 11 - C. neighborhood and UPAS N° 71 – C.E.A neighborhood (Zone 3); UPAS N°86 – V.E.L. neighborhood and UPAS N°24 – Cu. neighborhood (Zone 4); UPAS N° 76 - V.U. neighborhood and UPAS N° 30 – V.P. neighborhood (Zone 5); UPAS N° 82 – V.A.P. neighborhood and UPAS N° 34 – V..J neighborhood (Zone 6).

The evaluation of the state of psychomotor development was carried out from the National Screening Test (PRUNAPE) [16], a screening test to detect inapparent problems of psychomotor development in children under six years of age. PRUNAPE was developed in Argentina and is duly validated. It has high sensitivity, specificity, and positive predictive value (80, 93, and 94%, respectively) [17]. The child is evaluated in four areas of development: individual-social, fine motor, language, and gross motor. It consists of 78 psychomotor development guidelines and each guideline is graphed in horizontal bars that represent the 25°, 50°, 75° and 90° percentiles that express the percentage of children who at the time of the examination meet the developmental guideline. The chronological age is plotted on the x-axis and a vertical line corresponding to the age of the child to be evaluated is drawn in relation to this. This determines which guidelines should be evaluated in each case. This leads to type A guideline, whose 90° percentile is on the left, and type B guidelines, if the age line crosses the bar between the 75° and 90° percentile. The results are expressed in "Pass" or "Don't Pass" the test. It is considered "not pass" if it fails a guideline A or at least 2 guidelines type B, and in that case, there is a suspicion that this child could have a developmental problem. Otherwise the child "passes" the test.
Parenting practices and family environment were assessed through the Family Environment Questionnaire (AF) and the Parenting Practices Evaluation Instrument (IPCG), both developed by the Interdisciplinary Group of Psychosocial Studies (G.I.E.P) [18]. The first evaluation explores aspects associated with intrafamily relationships, communication methods, parenting practices and beliefs, as well as parental availability. On the other hand, IPCG is a semi-structured questionnaire inquiring situations related to parenting practices, beliefs and values that families manifest in everyday interactions [18]. As regards Parenting and Family Environment Practices instruments, the validity and reliability of its application in the context of Córdoba was determined through Cronbach's Alpha, obtaining a value of 0.85.
In conjunction with the instruments, information was surveyed in relation to the housing profile and the educational level and employment situation of the parents. The variables previously described and those included in the instruments were analyzed based on the frequency of the categorical variables and the summary measures of assesable variables. The associations were evaluated with the chi-squared test for categorical variables, ANOVA and non-parametric test for the assessable ones. In all cases, a confidence level of 95% was reached.
Ethical considerations: Ethical measures corresponding to national and international regulations (Helsinsky) were taken into account and the authorization of the father, mother, or guardian of the children was granted.

RESULTS

Housing characteristics of the 246 children's families interviewed in the study: 83.74% of them were not homeowners (n=206); 38.62% were in an overcrowded situation (n=95); all of them had access to electricity; only 2.03% had no access to drinking water (n=5); 94.71% had flush toilets (n=233), and 70.32% had concrete-based subfloors in their houses (n=173).
Regarding the study level of parents, the father/mother schooling was similar with 9 or more years of schooling in 42.27% (n=104) and 35.36% (n=87) respectively.
Regarding the employment situation, it was observed that 88.62% (n=218) of fathers worked, while only 28.33% (n=66) of mothers worked ($p<0.0001$).
Regarding the demographic characteristics of children, it was observed that 52.65% were girls, and 47.35% boys. As regards age, the distribution by group included 36.99% of children up to 1 year, greater than or equal to 1 year and up to 2 years 21.14%, greater than or equal to 2 years and up to 3 years 16.67%, greater than or equal to 3 years and up to 4 years 13.01% and greater than or equal to 4 years and up to 6 years 12.20% between 4 and 5 years old, with a predominance of children under 2 years ($p=0.008$).
PRUNAPE results are shown in ***Table 1***, highlighting that 3 out of 10 children did not pass the test, and when evaluating according to gender, no significant differences were noticed between those who passed and did not pass the test.

Group	Pass PRUNAPE (FA%)	Don´t pass PRUNAPE (FA%)
Study Group (n=246)	177 (71,95%)	68 (27,64%)
Men	83 (46,89%)	33 (53,11%)
Women	94 (53,11%)	35 (51,47%)

Table 1. Frequency distribution of PRUNAPE results in the study group and by sex.

On the other hand, it should be noted that the housing profile, described above, was not associated with psychomotor development.

Figure 1 shows the results of PRUNAPE according to children's age groups who passed or did not pass the test. When frequency comparisons were made between the age groups, it was found that children older than 2 years and up to 5 years have a greater risk of not passing PRUNAPE than children up to 2 years of age (43.14% and 16.78 % respectively, p<0.0001; OR:3.76; LI:2.10 - LS:6.74).

Regarding the areas of development evaluated by PRUNAPE, it was identified that, of the 246 children who answered the test, 12.65% (n=31) were affected in the Individual-Social area, 15.92 % (n=39) in the Adaptive Fine Motor area, 20% (n=49) in Language and 11.84% (n=29) in Gross Motor. The distribution of the affected development areas of children who did not pass the PRUNAPE can be seen in ***Figure 2***.

When evaluating the responses in the areas of development of children older or younger than 2 years, it was observed that in the Individual-Social area the proportion of affected areas was higher in children older than 2 years (20.59%; 6.99%; p<0.001 OR=3.45 LI 1.57 LS 7.58 respectively). Similarly, it was evident in the Language area (35.29%, 9.09%, p<0.0001 OR=5.45 LI 2.73 LS 10.88 respectively), and in the Adaptive Fine Motor area (21.57%, 11.89%, p<0.04 OR=2.04 LI 1.03 LS 4.04). In the Gross Motor area, no differences were observed (see ***Figure 3***).

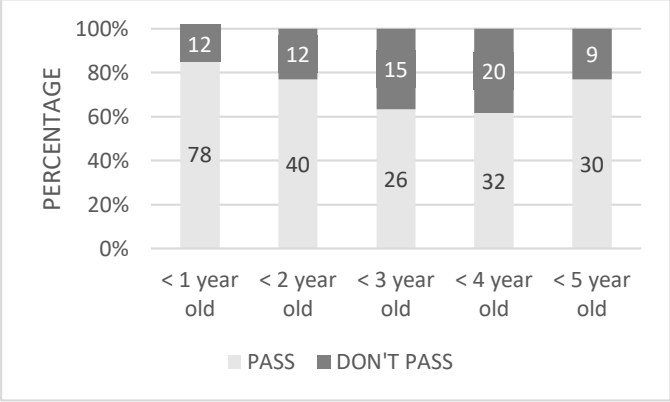

Figure 1: Distribution of PRUNAPE results according to age group of children included in the study (n=246).

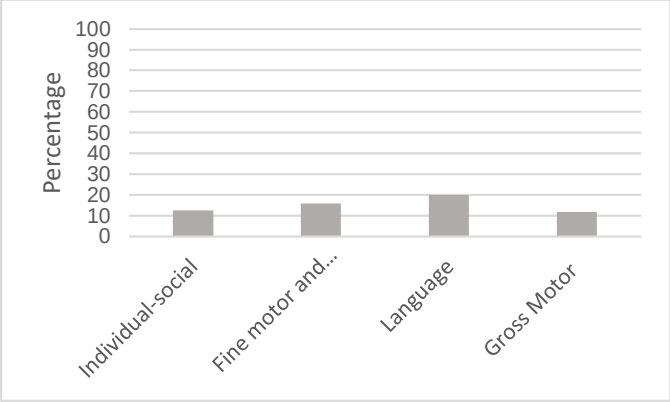

Figure 2: Distribution of PRUNAPE results according to the affected area of children who do not pass the PRUNAPE (n=68)

Ref.: Individual-social: affectation in social personal area, Fine motor and adaptative: affectation in Fine motor and adaptive area, Language: affectation in language area, Gross Motor: affectation in gross motor area.

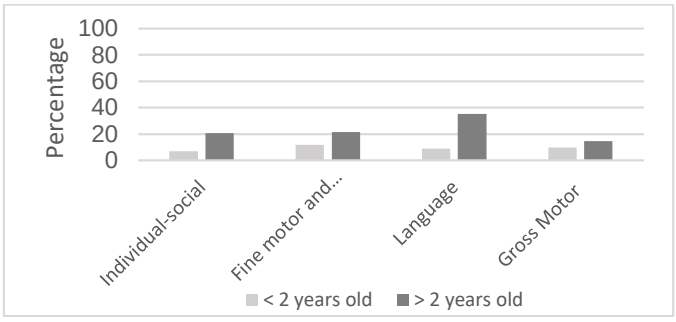

Figure 3. Distribution of PRUNAPE results according to affectation area and age group of children included in the study (n=246). Ref.: Individual-social: affectation in social personal area, Fine motor and adaptative: affectation in Fine motor and adaptive area, Language: affectation in language area, Gross Motor: affectation in gross motor area.

On the other hand, the variables that were associated with a situation of risk in children's development included in the study were the father's educational level with less than 9 years of schooling (p<0.001), the mother's employment status who does not work or has informal jobs (p<0.001) as well as the father's employment status (p<0.001).

Regarding the results of the Parenting Practice (PC, Práctica de Crianza) Instrument, it was observed that 39.84% of the families (n=98) presented risky parenting practices; while the results of the AF instrument showed a risk in 15.98% (n=39) of the cases. Among all the children at risk, described above, 69% were at risk both in PC and AF (p<0.001). Regarding family environment, the risk profile was characterized by sexist beliefs, depressive feelings, dissatisfaction of women, and the perception of an absent father when parents are separated (p<0.01). It should be noted that both the Parenting Practices and the Family Environment are related to the mother's educational level, being a risk factor the schooling length under 9 years (p<0.008 and p<0.0001 respectively).

The association of risk in psychomotor development (PRUNAPE) with risk detected in Parenting Practice and Family Environment was evaluated, showing that in the adult-child interaction there were no differences in the development of children whose mothers interpret the signals and respond emotionally and those who don't. Regarding mother-child communication, the relationship between singing and / or telling stories and psychomotor development was taking into account, observing that children whose mothers do not use these practices are 2.56 times more likely to fail PRUNAPE than children whose mothers do (48.15% and 70.37% PRUNAPE respectively, p<0.02 OR=2.56; IC: 1.13-5.77). Although game and sleep induction for children have an outstanding value in Parenting Practice, in the present investigation this indicator did not correlate with passing or not PRUNAPE. The visualization that parents have of the autonomy of the child was significantly associated with development, since children whose parents do not believe they are capable of wishing different things from birth have approximately twice the risk of not passing PRUNAPE (p<0.02, OR:1.96; IC:1.11-3.49) (see ***Table 2***).

Parenting Practices	Don´t pass PRUNAPE (%)	Pass PRUNAPE (%)	Significance	OR (IC)
Observation Adult-child interaction. Not responding properly	28,95	71,05	-	-
They do not refer to the presence of Songs and / or Stories	51,85	48,15	0,0228	2,56 (1,13-5,77)
Importance of the Game. They don't usually teach him	31,71	68,29	-	-
No perception of Autonomy	34,11	65,89	0,02	1,96 (1,11-3,49)

Table 2. Frequency distribution of PRUNAPE results in the study group and according to Parenting Practices.

DISCUSSION

According to the Committee on Growth and Development of the Argentine Pediatrics Society [19], 10% of children of average social level under 6 years of age and 40% of those from very disadvantaged backgrounds are at risk of presenting a problem of development, behavior and emotion. In the last decade, several studies account for these results [20- 24]. The findings of this study show that the development of children has a close relationship with family environment, educational level and situation of parents and parenting practices, since 3 out of 10 are at risk.

According to the age groups of children, the frequency of children under 2 years of age is higher than the group of 2 to 6 years, however the risk in psychomotor development predominates in the latter group. These findings match with those described by Lejarraga, Kelmasnky and Nunes [25] who report an increasing proportion of children who do not pass PRUNAPE as they grow older.

In this research, significant differences are registered in 3 of the 4 affected areas; however, the highest percentage of failures is related to the area of language, which corresponds to specific previous studies [26-27].

The association of the father's and mother's schooling level, as well as their employment situation associated with the risk of children, coincide with the results shared by several authors, who report that the low educational level achieved by the parents is a socio-environmental risk factor [28-30]. Parents with a higher education level create more stimulating environments for their children and have a different way of interacting with them, especially with regard to language, use richer vocabulary and read more to their children [30-31].

The approach to the family environment as a predictor of the child's development has been extensively studied [19-20]. In this regard, the detected risk profile in this investigation is expressed through sexist beliefs, depressive feelings, dissatisfaction of women, and the perception of an absent father when parents are separated.

On the other hand, although multiple studies show a high association between the low-quality interaction between mother and child during the first year of life and more problems in the development of the child [32-35], although this study did not present differences in the development of children whose mothers interpret signals and respond emotionally and those who do not, a favorable association was observed when the mother sings or tells stories.

In this respect, the importance of recreational and playful exchange between the child and their caregivers as a factor favoring the subjective constitution and children´s quality of life [36-38] in this investigation does not present associations with passing or not passing PRUNAPE.

Regarding child autonomy, the adult's role is decisive as containment, support, mediator with the social, normative, cultural and language world [39-40]. Therefore, the ability of parents to accept and value the autonomy of their child is a clear indicator for child development, and this research shows acceptable levels of association.

Finally, it can be assumed that the course of development, as a process, with its complexity is associated with adult-child interaction, mother-son communication (singing/telling-stories variable) and the visualization that parents have of the child's autonomy.

Limitaciones de responsabilidad
La responsabilidad del trabajo es exclusivamente de los autores.

Conflictos de interés
Ninguno

Fuentes de apoyo
Ministerio de Ciencia y Tecnología-Córdoba

Originalidad del trabajo
Este artículo es original y no ha sido enviado para su publicación a otro medio de difusión científica en forma completa ni parcialmente.

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Participación de los autores
Todos los autores han participado en la concepción del diseño, recolección de la información y elaboración del manuscrito, haciéndose públicamente responsables de su contenido y aprobando su versión final.

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