

Play into the domestic routine to promote child development: cross-sectional study

O brincar na rotina doméstica para a promoção do desenvolvimento infantil: estudo transversal

El juego en la rutina doméstica para la promoción del desarrollo infantil: estudio transversal

Katherine Solís-Cordero^a 

Julia Carlla Abrantes Rocha^b 

Patricia Marinho^c 

Patricia Camargo^c 

Elizabeth Fujimori^p 

How to cite this article:

Solis-Cordero K, Rocha JCA, Marinho P, Camargo P, Fujimori E. Play into the domestic routine to promote child development: cross-sectional study. Rev GaúchaEnferm. 2023;44:e20220127. doi: <https://doi.org/10.1590/1983-1447.2023.20220127.en>

ABSTRACT

Objective: To analyze the association between the incorporation of play into the domestic routine of caregivers, and the child development of children under their care.

Method: Cross-sectional study conducted with 129 caregiver-child dyads aged 12-23 months, living in the southern region of São Paulo. Child development was assessed using the Ages & Stages Questionnaire-3, and the incorporation of play into the domestic routine through a questionnaire and filming of the dyads in activities related to the domestic routine.

Results: Almost all the caregivers were the mother (98%), who, when answering the questionnaire, reported incorporating play into their domestic routine (93%), however in the video, only one third played with the child (34%). There was a positive association between playing in moments of domestic routine and domains of child development in children aged 18 months or less.

Conclusions: A positive association was found between the incorporation of play into the domestic routine and child development.

Keywords: Child development. Child care. Play and playthings. Health promotion. Mother-child relations. Public health nursing.

RESUMO

Objetivo: Analisar a associação entre a incorporação do brincar na rotina doméstica de cuidadoras e o desenvolvimento infantil de crianças sob seu cuidado.

Método: Estudo transversal conduzido com 129 díades cuidadora-criança de 12-23 meses, na região sul de São Paulo. O desenvolvimento infantil foi avaliado com a utilização do *Ages & Stages Questionnaire-3*, e a incorporação do brincar na rotina doméstica, por meio de questionário e filmagem das díades em atividades relacionadas à rotina doméstica.

Resultados: Quase a totalidade das cuidadoras era a mãe (98%) que, ao responder ao questionário, referiu incorporar o brincar na rotina doméstica (93%), porém, no vídeo, apenas um terço brincou com a criança (34%). Verificou-se associação positiva entre brincadeiras em momentos da rotina doméstica e domínios do desenvolvimento em crianças com idade igual ou inferior a 18 meses.

Conclusões: Constatou-se associação positiva entre a incorporação do brincar na rotina doméstica e o desenvolvimento infantil.

Palavras-chave: Desenvolvimento infantil. Cuidado da criança. Jogos e brinquedos. Promoção da saúde. Relações mãe-filho. Enfermagem em saúde pública.

RESUMEN

Objetivo: Analizar la asociación entre la incorporación del juego en la rutina doméstica, por parte de cuidadoras, y el desarrollo infantil de niños bajo su cuidado.

Método: Estudio transversal con 129 díadas cuidadora-niño de 12-23 meses, en la ciudad de São Paulo. El desarrollo infantil se evaluó con el *Ages & Stages Questionnaire-3* y la incorporación del juego a la rutina doméstica a través de cuestionario y filmaciones de las díadas en actividades relacionadas con la rutina doméstica.

Resultados: Casi todas las cuidadoras fueron la madre (98%) que, al responder al cuestionario, refirieron incorporar el juego en su rutina doméstica (93%), pero en el video, solo un tercio jugó con el niño (34%). Hubo asociación positiva entre jugar en momentos de rutina doméstica y dominios del desarrollo de niños de 18 meses o menos.

Conclusiones: Se encontró una asociación positiva entre la incorporación del juego en la rutina doméstica y el desarrollo infantil.

Palabras clave: Desarrollo infantil. Cuidado del niño. Juego e implementos de juego. Promoción de la salud. Relaciones madre-hijo. Enfermería en salud pública.

^a Universidad de Costa Rica (UCR), Escuela de Enfermería. San José, Costa Rica

^b Universidade de São Paulo (USP), Escola de Enfermagem. São Paulo, São Paulo, Brasil

^c Tempojunto. São Paulo, São Paulo, Brasil

■ INTRODUCTION

Scientific evidence points out to the importance of play to promote child development. Play is so essential to child development that it should be included in the very definition of childhood as something inherent to a child's life. From the earliest years of life, children have a natural potential to learn about the world, interact with the people around them and get involved with the environment through play⁽¹⁾.

Playing improves the structure and development of the brain and promotes the acquisition of socioemotional, cognitive, language and motor skills. In addition, it stimulates the most important interactions between the child and their parents or caregivers during early childhood, improving the quality of adult-child interaction⁽²⁻⁴⁾. In conditions of poverty and social vulnerability, playing becomes even more important, as it protects the brain from the negative impact produced by toxic stress^(2,5). Children who live in highly adverse environments tend to have higher levels of cortisol, a hormone that regulates stress, but which is also related to areas of the central nervous system responsible for memory, learning, emotions, and the immune system. Thus, frequent exposure to stress events changes cortisol levels and can also lead to other problems in areas corresponding to child development⁽⁶⁾.

Despite the fact that a high number of children from low- and middle-income countries⁽⁷⁾ and excluded social groups⁽⁸⁾ are at risk of not reaching their full potential for development and the importance of play for promoting development, especially in this context^(2,4), few studies evaluate the association between play and early childhood development in socially vulnerable populations⁽⁹⁾ and in the family environment, as studies in nursing predominate in school⁽¹⁰⁾ and hospital environments^(11,12).

A document that addresses issues that may prevent poor children of the benefits of play highlights the obstacles: exposure to social stressors (heads of household with low levels of education; single mothers without social support and financial resources; absent fathers; limited access to early childhood education; unsafe neighborhoods; and lack of preventive health care). In these families, parents or caregivers have less time to play with their children, which represents an additional risk for child development⁽⁴⁾.

In Brazil, results of the study "Perceptions and Practices of Society on Early Childhood" (*Percepções e Práticas da Sociedade em Relação à Primeira Infância*) showed that only 19% of participants recognized play as one of the important aspects for the development of children under three years old⁽¹³⁾. There is also evidence that, even when parents recognize play as an important aspect for their children development, they do not consider the need for their involvement in play⁽³⁾. These

beliefs influence the value that parents or caregivers give to playing and their involvement in playing with the child^(14,15).

Nowadays, we live with parents who are overloaded with work outside the home and with taking care of the house and children who are equally overloaded with activities, which contributes to reduce of play time between parents and children, especially due to the belief that there is need for specific and exclusive periods of the day, in addition to expensive and technological toys for such activities. In Brazil, a research developed to learn about the experience of mothers living in favelas regarding playing with their children under 6 years old revealed that: for 66% of the participants, taking care of the children is the activity that takes up most of their time, a situation that worsened during the COVID-19 pandemic, when 68% pointed out for difficulty in taking care of the house and children, although 59% reported that they get involved in play with the child, 88% consider the screens an important support to take care of the children and household chores and 63% of children play mainly indoors⁽¹⁶⁾.

However, the play between parents or caregivers and the child does not require long time and can happen during daily routine activities, such as cooking, cleaning, feeding and bathing, using household materials and objects that are commonly found in a house^(2,17).

Given these considerations, the objective of this study was to analyze the association between the incorporation of play into the caregivers' domestic routine and the child development of children aged 12 to 23 months. Based on the literature, it is expected that children whose caregivers incorporate play into their domestic routine have better child development.

A caregiver is understood as the one who lives with the child on a daily basis, who has the responsibility to care for, love, teach and stimulate, and with whom the child forms the strongest emotional bonds in the first years of life⁽¹⁸⁾. From this perspective, a caregiver can be a mother, grandmother, aunt, sister, friend, or neighbor, as long as is the person who takes care for and lives with the child on a daily basis.

■ METHOD

This is a cross-sectional study that was part of a broader investigation entitled "BEM Program (Play Teaches to Change): play into daily routine to promote child development", "*Programa BEM (Brincar Ensina a Mudar): o brincar na rotina diária para a promoção do desenvolvimento infantil*" approved by the Ethics Committee of the *Fundação José Luiz Egydio Setubal* under opinion number 3,448,089. The BEM Program is a remote intervention that sends videos of play activities to caregivers of children aged 12 to 23 months that they can include activities aimed at stimulating child development in

their daily domestic routine. The data presented here refer to the reality of caregivers regarding the incorporation of play in the domestic routine before the implementation of the BEM Program.

The sample size was estimated based on the child development indicator, considering a power of 80% and an alpha of 5%, which indicated a sample of 160 caregiver-child dyads aged 12 to 23 months old under their care. However, the sample consisted of 129 dyads, since the difficulties due to the COVID-19 pandemic did not allow the scope of the sample calculation. The inclusion criteria were the child being between 12 and 23 months old; attend the Early Childhood Education Centers participating in the study; and having a caregiver who had a smartphone with internet. The exclusion criterion was the child presenting clinical conditions that could interfere with typical development.

The dyads were recruited in Early Childhood Education Centers (*Centros de Educação Infantil* – CEI) in the southern region of São Paulo which, after study presentation, expressed interest in participating and authorized the recruitment of the dyads. The first contact with the families was during meetings that were held in each CEI on dates suggested by the institutions' management. On that occasion, the research team presented the study and invited families to participate.

Data collection, which included interviews and video shooting, was carried out in the homes of the dyads from July 2019 to June 2020 through pre-scheduled visits with the family. The team of interviewers included professionals (nurses, psychologists and public health scholars) and nursing and psychology undergraduates in the last semester who had 40 hours of theoretical and practical training, planned and developed by the researchers, with experience with the instruments used, and who, also prepared the "Interviewer's Manual – BEM Program" to be used as a guide during data collection, as it had detailed information about the instruments, as well as information for conducting the interview and filming. The instruments were inserted in REDCap software (Research Electronic Data Capture), which allows offline data collection and direct transmission of answers to a database, which avoids wasting time and typing errors⁽¹⁹⁾. Thus, the interviewers used tablets, which were also used for filming a video lasting 5 minutes (duration defined based on the needs of the broader research), related to the domestic routine activity, among the four analyzed in the BEM Program: taking care of the child; cleaning the house; cooking or washing dishes; and doing laundry. Filming was only made with the consent of the caregivers, who were aware that they were being filmed.

Child development, dependent variable of the study, was assessed using the Brazilian version of the Ages & Stages

Questionnaire-3 (ASQ-3), aimed at the assessment of children from zero to five and a half years old⁽²⁰⁾. The instrument consists of 21 questionnaires, one for each age group, and assesses child development in five domains: a) communication; b) gross motor; c) fine motor; d) problem solving; e) personal-social. For children born prematurely, age adjustment was used. All questionnaires have the same structure, consisting of five blocks, one for each domain, with six questions each, so that in the end there are 30 questions. The questions are specific to evaluate a certain activity with the possibility of generating three answers: "yes", if the child can perform the activity every time; "sometimes", when the child cannot always perform the activity successfully; "not yet" when the child cannot or has never performed the activity. For each domain, the child obtains a score between 0 and 60, which is classified by age group as "adequate child development" or "inadequate child development"⁽¹⁴⁾.

The incorporation of play into the domestic routine, an independent variable, was assessed by: 1. caregiver's engagement in play with the child during the domestic routine; and 2. repertoire of play during the domestic routine. Engagement was assessed by the answers to the questions: do you play with the child on a daily basis? (Yes No); and do you consider it possible to play with the child during the domestic routine? (yes/no), which were included in the instrument created by the research team, since it was not located in the literature review, an instrument that assessed the incorporation of play into the domestic routine. Furthermore, play was analyzed in the 5-minute video. For this, it was created a checklist that allowed assessing the engagement of caregiver in play with the child during the domestic routine, by identifying the presence of play activities (yes/no) in one of the four moments of the domestic routine addressed in the BEM Program. Two researchers were trained to analyze the videos and complete the checklist with reliability established at $r > 0.8$ for both.

The repertoire of play that the caregiver incorporated into their domestic routine was evaluated based on a list that included: singing, dancing, drawing, playing ball, playing with water, hiding, and looking for objects, among other activities, distributed in each of the four moments of the domestic routine that were evaluated. For this survey, the play activities contained in the videos created by the BEM Program team were considered. For analysis, the play activities were grouped (average of play and standard deviation) according to the most stimulating CD domains and the moment of the domestic routine. Chart 1 shows the repertoire of assessed play, total and number of activities according to moments of the domestic routine in which they could occur and the domains of child development that most stimulate.

CD domains stimulated by play	Total of assessed play	Moments of domestic routine	No. of activities	List of assessed play
Communication	9	Taking care of the child	3	Singing; reading stories; telling stories
		Cleaning the house	2	Singing; telling stories
		Cooking	2	Singing; telling stories
		Doing laundry	2	Singing; telling stories
Gross motor	6	Taking care of the child	2	Dancing; playing ball
		Cleaning the house	2	Dancing; playing ball
		Cooking	1	Dancing
		Doing laundry	1	Dancing
Fine motor	9	Taking care of the child	3	Drawing; playing with playdough; playing with water
		Cleaning the house	2	Playing with playdough; playing with water
		Cooking	2	Playing with playdough; playing with water
		Doing laundry	2	Playing with playdough; playing with water
Problem solving	8	Taking care of the child	2	Hide-and-seek; playing with Lego/ building toys or objects
		Cleaning the house	2	Hide-and-seek; playing with Lego/ building toys or objects
		Cooking	2	Hide-and-seek; playing with Lego/ building toys or objects
		Doing laundry	2	Hide-and-seek; playing with Lego/ building toys or objects
Personal-social	8	Taking care of the child	2	Playing make-believe; playing with doll/ little men and accessories
		Cleaning the house	2	Playing make-believe; playing with doll/ little men and accessories
		Cooking	2	Playing make-believe; playing with doll/ little men and accessories
		Doing laundry	2	Playing make-believe; playing with doll/ little men and accessories

Chart 1 – Repertoire of assessed play (total and number of activities), distributed according to moments of the domestic routine in which they could occur and the domains of child development most stimulated. São Paulo, São Paulo, Brazil, 2020
 Source: Own elaboration, 2020

The covariates referred to family characteristics: monthly family income range in BRL (<1,000.00 BRL; 1,000.00-3,000.00 BRL; >3,000.00 BRL), receives of Family Allowance (*Bolsa-Família*) (yes/no) and number of children at home (1; >1); caregiver characteristics: respondent (mother/grandmother), age in years (≤ 19 ; 20-29; ≥ 30), skin color (white/non-white), marital status (with/without partner), education level in years (≤ 12 ; >12) and employment (employed/unemployed); and child characteristics: child's age in months (≤ 12 ; 13-15; 16-18; ≥ 19), gender (male/female), skin color (white/non-white – classification that included children referred to by their caregiver as black, brown or other than white skin color), prematurity (yes/no), starting age at daycare center (mean and standard deviation). *Bolsa-Família* refers to the government's program to fight against poverty and inequality, which has an income supplement as one of its axes. Prematurity at birth was defined as a child born before completing 37 weeks of gestation.

Data analysis was processed using Stata software version 15.0. For categorical variables, absolute and relative frequencies are presented; and for continuous variables, means (\bar{x}) standard deviation (sd). No continuous variable showed normality according to the Kolmogorov-Smirnov

test. To analyze the association between child development and the incorporation of play into the domestic routine, the Mann-Whitney (two categories), Kruskal-Wallis (three or more categories) and Spearman's Correlation tests were used. The significance level adopted was 5%.

■ RESULTS

Table 1 shows the characteristics of the family, caregivers, and children. More than half of the families participating in the study had a monthly income between 1,000.00 BRL and 3,000.00 BRL (55.0%) and more than one child at home (52.7%), with almost a fifth receiving Bolsa-Família (18.6%). The caregivers were predominantly the mothers of the studied children (97.7%) with a mean age of 30.6 years old and 12.0 years of study; almost three-quarters identified themselves as non-white (71.3%), lived with partner (72.9%) and two-thirds were employed (64.3%). Regarding the children: they had a mean age of 16.2 months and started daycare center at a mean age of 10.9 months; more than half were male (55.0%) and classified as non-white (57.4%) and almost all were born at term (90.7%).

Table 1 – Characterization of families, caregivers, and children. São Paulo, São Paulo, Brazil, 2020

Variables		n	%
Family characteristics			
Monthly family income range (BRL)			
< 1000		32	24.8
1000-3000		71	55.0
> 3000		26	20.2
Receives <i>Bolsa-Família</i>			
Yes		24	18.6
No		105	81.4
Number of children at home	\bar{x} (sd)*	1.8 (0.1)	
1		61	47.3
> 1		68	52.7
Caregiver characteristics			
Respondent			
Mother		126	97.7
Grandmother		3	2.3

Table 1 – Cont.

Variables		n	%
Age (years)	x (sd)	30.6 (0.7)	
≤ 19		10	7.8
20-29		48	37.2
≥ 30		71	55.0
Skin color			
White		37	28.7
Non-white		92	71.3
Marital status			
With partner		94	72.9
Withoutpartner		35	27.1
Education level (years)	x (sd)	12.0 (0.3)	
≤ 12		80	62.0
> 12		49	38.0
Employment			
Employed		83	64.3
Unemployed		46	35.7
Children characteristics			
Child's age in month	x (sd)	16.2 (0.3)	
≤ 12		23	17.8
13-15		29	22.5
16-18		37	28.7
≥ 19		40	31.0
Gender			
Male		71	55.0
Female		58	45.0
Skin color			
White		55	42.6
Non-white		74	57.4
Prematurity			
Yes		12	9.3
No		117	90.7
Starting age at day care center (months)	x (dp)	10.9 (0.3)	

Source: Database, 2020

*x (sd) = mean (standard deviation)

Regarding child development, the assessment showed a higher number of children with adequate development in the 'personal-social' domain (78.3%) and a lower number in the 'fine motor' domain (59.7%).

Data regarding the caregiver's engagement in play with the child during the domestic routine and the repertoire of play assessed, according to CD domains, are shown in Table 2. It was found that almost all caregivers reported that they played with the child on a daily basis (93.0%), and most of them answered that they thought it was possible to play with the child while doing household chores (72.1%), however the video analysis showed that just over a third of the participants played with the child while performing the filmed domestic activity (34.2%). As for the repertoire, play

that stimulate the 'gross motor' domain (such as dancing and playing ball) predominated. Those that stimulate the 'fine motor' domain (such as drawing, playing with playdough or water) were the least practiced during domestic routine activities. The highest averages of play activities were practiced when 'taking care of the child'.

In Table 3, which shows the distribution of play activities according to the assessed moments of the domestic routine, it is possible to observe that those that included music, such as singing and dancing, were the most practiced. On the other hand, reading or telling stories, drawing, and playing with playdough were the least practiced play activities at different moments of the routine.

Table 2 – Caregiver's engagement in play during domestic routine and average of play according to CD domains that most stimulate and activities of the domestic routine. São Paulo, São Paulo, Brazil 2020

Variables	N	%
Caregiver's engagement in play with the child during the domestic routine		
Do you play with the child on a daily basis?		
Yes	120	93.0
No	9	7.0
Do you consider it possible to play with the child during the domestic routine?		
Yes	93	72.1
No	36	27.9
Video with play activities filmed during the domestic routine [§]		
Yes	42	34.2
No	81	65.8
CD domains and play according to domestic routine (no.: play)		
Communication – total of 9 play activities	4.3	0.20
Taking care of the child (3: singing; reading stories; telling stories)	1.9	0.08
Cleaning the house (2: singing; telling stories)	0.9	0.06
Cooking(2: singing; telling stories)	0.8	0.06
Doing laundry (2: singing; telling stories)	0.6	0.06

Table 2 – Cont.

Variables	N	%
Gross motor – total of 6 play activities	3.4	0.15
Taking care of the child (2: dancing; playing ball)	1.5	0.05
Cleaning the house (2: dancing; playing ball)	1.0	0.07
Cooking (1: dancing)	0.5	0.04
Doing laundry (1: dancing)	0.4	0.04
Fine motor – total of 9 play activities	2.3	0.15
Taking care of the child (3: drawing; playing with playdough; playing with water)	1.2	0.07
Cleaning the house (2: playing with playdough; playing with water)	0.4	0.05
Cooking (2: playing with playdough; playing with water)	0.3	0.05
Doing laundry (2: playing with playdough; playing with water)	0.4	0.04
Problem solving- total of 8 play activities	2.8	0.18
Taking care of the child (2: hide-and-peek; playing with Lego/building toys or objects)	1.2	0.07
Cleaning the house (2: hide-and-peek; playing with Lego/building toys or objects)	0.7	0.07
Cooking (2: hide-and-peek; playing with Lego/building toys or objects)	0.5	0.06
Doing laundry (2: hide-and-peek; playing with Lego/building toys or objects)	0.4	0.06
Personal-social – total of 8 play activities	3.4	0.18
Taking care of the child (2: playing make-believe; playing with doll/little men and accessories)	1.5	0.06
Cleaning the house (2: playing make-believe; playing with doll/little men and accessories)	0.8	0.07
Cooking (2: playing make-believe; playing with doll/little men and accessories)	0.6	0.07
Doing laundry (2: playing make-believe; playing with doll/little men and accessories)	0.5	0.06

Source: Database, 2020

[§]No data were obtained for the entire sample; *x=mean; **sd=standard deviation.

The analysis of the association between child development (CD) and the types of play practiced, according to the CD domains that they stimulate and the moments of the domestic routine in which they were practiced, showed for the total of children that games that stimulate ‘communication’

were significantly associated with the CD domain ‘fine motor’, while those that stimulated the ‘personal-social’ domain were associated with the ‘communication’ domain ($p < 0.05$). Regarding the different moments of the domestic routine, the play activities when ‘taking care of the child’ were positively

Table 3 – Distribution of play according to the studied moments of the domestic routine. São Paulo, São Paulo, Brazil 2020

Play	Taking care of the child		Cleaning the house*		Cooking ⁺		Doing laundry [§]	
	n	%	n	%	n	%	n	%
Singing/listening to music	122	94.6	91	77.8	81	68.6	62	56.9
Dancing	112	86.8	81	69.2	70	59.3	49	44.9
Playing with dolls/little men and accessories	103	79.8	60	51.3	43	36.4	31	28.4
Playing with water or dirt	99	76.7	39	33.3	36	30.5	32	29.4
Hiding and seeking objects	91	70.5	59	50.4	36	30.5	29	26.6
Playing ball	77	59.7	51	43.6	-	-	-	-
Playing make-believe	76	58.9	44	37.6	36	30.5	33	30.3
Telling stories	67	51.2	29	24.8	25	21.2	18	16.5
Playing with Lego/toys or building objects (e.g., pots)	61	47.3	32	27.3	29	24.6	20	18.3
Reading stories	55	42.6	-	-	-	-	-	-
Drawing	46	35.7	15	12.8	9	7.6	9	8.2
Playing with playdough	10	7.7	-	-	-	-	-	-

Source: Database, 2020

*117 dyads, ⁺118 dyads, [§]109 dyads, – play was not considered for this moment in the domestic routine

associated with 'fine motor' and 'problem solving', and those played while 'cleaning the house' were associated with 'communication' and 'fine motor' ($p < 0.05$).

When stratifying the analysis by age group (Table 4), there was a greater number of significant positive associations in children aged ≤ 18 months, especially in the domains of development "communication" and "fine motor", in addition to association with "personal-social".

■ DISCUSSION

The present study aimed to analyze the association between the incorporation play into the domestic routine of caregivers and the child development of children aged 12 to 23 months under their care. Almost all of the caregivers mentioned play with the children in their domestic routine, observing a positive association between child development

and the play activities, mostly in children aged 18 months or less, which allowed to partially confirm our hypothesis.

These findings are consistent with other studies that showed the contributions brought by play between adults and the children in the first years of life to improve the quality of interaction and promote skills in the different domains of child development^(2,21). Play is essential for the development of the child's brain, both regarding structure and functioning, from which it can be deduced that any type of play, especially those involving parents participation, can promote better child development, as the first interaction experiences that happen in the household environment with caregivers stimulate the quality and quantity of brain connections⁽²²⁾. In addition, playing protects the child from the negative impact of the toxic stress under which the child population lives, especially those in conditions of social vulnerability^(2,5) as was the case of the children of this study.

Table 4 – Association between domains of child development (CD) and play by age group according to CD domains that most stimulate and domestic routine in which they were practiced. São Paulo, São Paulo, Brazil 2020

Total of play activities	Domains of child development									
	Communication		Gross Motor		Fine motor		Problem solving		Personal-social	
	r	p	r	p	r	p	r	p	r	p
Age group ≤ 18 months										
CD domains that most stimulate										
Communication	0.2633	0.0127	0.0455	0.6723	0.2894	0.0060	0.1439	0.1784	0.2154	0.0427
Gross motor	0.2246	0.0343	0.0427	0.6913	0.2530	0.0167	0.0847	0.4302	0.2427	0.0219
Fine motor	0.0973	0.3645	0.0373	0.7286	0.1247	0.2443	0.0676	0.5293	0.1069	0.3187
Problem solving	0.2925	0.0054	0.1286	0.2297	0.2186	0.0396	0.1579	0.1395	0.1018	0.3424
Personal-social	0.3466	0.0009	-0.1010	0.3463	0.2499	0.0182	0.1431	0.1810	0.1703	0.1105
Domestic routine in which they were practiced										
Taking care of the child	0.2475	0.0193	0.0730	0.4968	0.2366	0.0256	0.2151	0.0430	0.1824	0.0871
Cleaning the house	0.2947	0.0051	0.0828	0.4407	0.2633	0.0127	0.1575	0.1405	0.2314	0.0292
Cooking	0.2306	0.0297	-0.0007	0.9948	0.2102	0.0480	0.0914	0.3943	0.0910	0.3962
Doing laundry	0.2124	0.0457	-0.0387	0.7188	0.2339	0.0274	0.1370	0.2005	0.2300	0.0302

Table 4 – Cont.

Total of play activities	Domains of child development									
	Communication		Gross Motor		Fine motor		Problem solving		Personal-social	
	r	p	r	p	r	p	r	p	r	p
Age group > 18 months										
CD domains that most stimulate										
Communication	-0.0615	0.7063	0.1557	0.3374	0.0810	0.6194	0.2880	0.0715	-0.0960	0.5559
Gross motor	-0.1122	0.4908	-0.0590	0.7178	-0.0464	0.7762	0.2327	0.1485	-0.2109	0.1913
Fine motor	-0.1285	0.4293	-0.1011	0.5348	0.0675	0.6792	0.1704	0.2931	-0.1700	0.2944
Problem solving	-0.2942	0.0654	-0.0800	0.6237	0.0203	0.9013	0.0796	0.6252	-0.1906	0.2387
Personal-social	-0.0458	0.7792	0.0163	0.9203	-0.0255	0.8761	0.0089	0.9568	-0.0466	0.7754
Domestic routine in which they were practiced										
Taking care of the child	-0.1175	0.4703	-0.0892	0.5843	0.1055	0.5170	0.1431	0.3785	-0.0172	0.9161
Cleaning the house	-0.0117	0.9427	0.0064	0.9688	-0.0346	0.8320	0.1806	0.2648	-0.1056	0.5168
Cooking	-0.0285	0.8616	0.0939	0.5644	0.0138	0.9327	0.2106	0.1921	-0.1308	0.4212
Doing laundry	-0.1894	0.2418	0.0436	0.7894	-0.0712	0.6622	0.0834	0.6087	-0.1495	0.3573

Source: Database, 2020

The greatest number of positive associations found between the incorporation of play into the domestic routine and child development in children aged 18 months or less permeates the very concept of neurological development which, from a biological point of view, starts at conception, however, it is its interaction with the environment that shapes the structure and functioning of the central nervous system, which has maximum development speed in the first months and years of life⁽²²⁾. In this context, younger children require more attention from people who can interact with them in play, which could explain the associations found primarily among children younger than 18 months.

The finding in which it was evidenced that almost all of the participants mentioned playing with the child on a daily basis, together with the question that almost three quarters answered that it was possible to play with the child during the domestic routine, could be indicative that the participants recognized the importance of play for the child's development, or even that in the present study, the caregivers answered to what was expected to not feel judged, that is, there may have been an information bias. With a view of reducing this type of bias, besides asking questions in the interview form, data collection included filming a video that allowed to assess the incorporation of play in one of the four moments of the domestic routine considered in the study, which showed disagreement between the caregivers' answers and what actually happened in the domestic routine, when only a third played with the child in the video.

The divergence found supports the evidence that even when parents or caregivers recognize play as an important aspect for their children's development, they disregard the need for their involvement in play⁽³⁾. Considering that the daily interaction between parents and children is a protective factor for child development and that the implementation of interventions focused on the practice of playful activities between caregiver-child dyads is effective in increasing the parents' involvement in their children's routine and games⁽²³⁾.

The results of the present study allow to advance in aspects regarding the practice of play detailing the interaction between the dyads participating in the study (Do caregiver and child play during the domestic routine? If so, what do they play and when do they play?), which may contribute for the design of customized interventions to improve the caregiver-child interaction and, consequently, to promote child development.

In fact, knowledge about how caregivers engage in play with children provides useful and timely information for the development or improvement of programs or interventions aimed at promoting the child development of children in

social vulnerability and helps to fill in existing gaps about the play in this specific population⁽⁹⁾. Furthermore, analyzing the incorporation of play according to the moments of the domestic routine constitutes an innovative and appropriate idea for the current times in which caregivers are overloaded with hours of work to be done both outside and inside home, in addition to caring for the children. Therefore, the different moments of the day, such as, for example, taking care of the child, cooking, cleaning the house and doing laundry, represent valuable opportunities to include play with children that promote adult-child interaction and the child development⁽²⁾.

Despite the wide consensus that play is essential for child development, studies on play are concentrated in school environments⁽¹⁰⁾, and, in nursing, the focus is on therapeutic play, especially in the hospital environment^(11,12). Thus, the association between the incorporation of play at different times in the domestic routine and child development has been little studied. This scarcity is likely due, in part, to the lack of instruments that allow assessing play in this approach, since different studies predominantly use six questions that collect information about the frequency with which the adult participates in different activities with the child, such as singing, telling or reading stories, naming objects and playing or leaving the house, used in the Multiple Indicator Cluster Surveys (MICS), which refer to household research developed by the UNICEF – United Nations International Children's Emergency Fund to obtain international data on the situation of children and women⁽²⁴⁻²⁷⁾. In this context, the present study is important because it also presents which activities, and at what time of day, are practiced by the caregiver and the child.

In Brazil, the National Policy for Comprehensive Child Health Care (*Política Nacional de Atenção Integral à Saúde da Criança*- PNAISC) establishes as the third strategic axis the "promotion and monitoring of growth and comprehensive development". This axis recognizes the importance of the environment and the strengthening of family bonds for the full development of the child in early childhood and the essential role of primary health care⁽²⁸⁾. However it does not make direct reference to the importance of play for child development and the promotion of incorporating play between the caregiver and the child in daily routine. Thus, the present study, incorporated into the available literature, contributes to updating materials that guide health professionals in their actions to promote and protect child development through play.

A study conducted in the United States showed that after the implementation of a brief intervention based on

Primary Health Care, where the space of pediatric consultations was used to stimulate parental behavior and promote child development, parents in the intervention group showed a significant increase in number of times they played with the child per week compared to parents in the control group, who received only an information leaflet about child development⁽²⁹⁾.

Specifically, regarding the contributions to nursing within the scope of Primary Health Care, the present study serves as a basis for the professional to provide to service users new guidance about the importance of play that, with the guidance of the Handbook of Child⁽³⁰⁾ complement each other. This guidance includes stimulating play, especially those that promote fine motor skills, which was the domain with the lowest number of children with adequate development, and the type of play less practiced during routine domestic activities. Also, the incorporation of play into the domestic routine using simple materials (such as pans, lids, plastic pots, and bowls, etc.) when cleaning the house, cooking and doing laundry. (In Chart 1 there are examples of the different activities that can be performed based on domains of child development and moments of the domestic routine).

Despite the contributions of the study, it is important to highlight its limitations. The first refers specifically to the study design, which, being a cross-sectional study, does not allow establishing a causal relationship between the variables studied. Moreover, there is the difficulty of comparing the results obtained with data from the literature due to the lack of studies and instruments capable of analyzing play, which made it necessary to develop a specific instrument for data collection.

■ CONCLUSIONS

The present study showed that there is a positive association between the incorporation of play into the domestic routine and child development. This result confirms the hypothesis that children cared for by adults who incorporate playing into their domestic routine present better child development. A greater number of associations was observed in children aged 18 months or less, especially in the domains of development “communication” and “fine motor”, in addition to the association with “personal-social”. Therefore, incorporating play into the domestic routine is an important strategy that should be encouraged by nursing professionals in assisting children and their families in Primary Health Care to promote child development. For future studies, in addition to improving instruments to assess this association, it would be important to design intervention studies that, in

fact, allows to assess the effect of incorporating play in child development. Moreover, considering that play contributes to improving the quality of the caregiver-child interaction, this variable should be analyzed in future investigations. Finally, the results can strengthen the set of knowledge of child health disciplines regarding child development and interventions for its promotion, both in undergraduate and graduate nursing courses. The inclusion of this theme in study plans should consider that nursing care for the child population involves several aspects that affect the children's development, so that caring for children's health also implies in caring for the child's development.

■ REFERENCES

1. Sethna V, Perry E, Domoney J, Illes J, Psychogiou L, Rowbotham NEL, et al. Father-child interactions at 3 months and 24 months: contributions to children's cognitive development at 24 months. *Infant Ment Health J.* 2017;38(3):378-90. doi: <https://doi.org/10.1002/imhj.21642>
2. Yogman M, Garner A, Hutchinson J, Hirsh-Pasek K, Golinkoff RM; Committee on Psychosocial Aspects of Child and Family Health, et al. The power of play: a pediatric role in enhancing development in young children. *Pediatrics.* 2018;142(3):e20182058. doi: <https://doi.org/10.1542/peds.2018-2058>
3. Smith RL, Stagnitti K, Lewis AJ, Pépin G. The views of parents who experience intergenerational poverty on parenting and play: a qualitative analysis. *Child Care Health Dev.* 2015;41(6):873-81. doi: <https://doi.org/10.1111/cch.12268>
4. Milteer RM, Ginsburg KR; Council on Communications and Media; Committee on Psychosocial Aspects of Child and Family Health. The importance of play in promoting healthy child development and maintaining strong parent-child bond: focus on children in poverty. *Pediatrics.* 2012;129(1):e204-13. doi: <https://doi.org/10.1542/peds.2011-2953>
5. McEwen CA, McEwen BS. Social structure, adversity, toxic stress, and intergenerational poverty: an early childhood model. *Annu Rev Sociol.* 2017;43:445-72. doi: <https://doi.org/10.1146/annurev-soc-060116-053252>
6. Branco MSS, Linhares MBM. The toxic stress and its impact on development in the Shonkoff's Ecobio developmental Theoretical approach. *Estud Psicol.* 2018;35(1):89-98. doi: <https://doi.org/10.1590/1982-02752018000100009>
7. McCoy DC, Seiden J, Cuartas J, Pisani L, Waldman M. Estimates of a multidimensional index of nurturing care in the next 1000 days of life for children in low-income and middle-income countries: a modelling study. *Lancet Child Adolesc Health.* 2022;6(5):324-34. doi: [https://doi.org/10.1016/S2352-4642\(22\)00076-1](https://doi.org/10.1016/S2352-4642(22)00076-1)
8. Oliveira CVR, Palombo CNT, Toriyama ATM, Veríssimo MLOR, Castro MC, Fujimori E. Desigualdades em saúde: o desenvolvimento infantil nos diferentes grupos sociais. *Rev Esc Enferm USP.* 2019;53:e03499. doi: <https://doi.org/10.1590/s1980-220x2018037103499>
9. Cabrera NJ, Karberg E, Malin JL, Aldoney D. The magic of play: low-income mothers' and fathers' playfulness and children's emotion regulation and vocabulary skills. *Infant Ment Health J.* 2017;38(6):757-71. doi: <https://doi.org/10.1002/imhj.21682>
10. Whitebread D, Neale D, Jensen H, Liu C, Solis SL, Hopkins E, et al. The role of play in children's development: a review of the evidence [Internet]. Denmark: The LEGO Foundation; 2017.

11. Chiavon SD, Brum CN, Santos E, Sartoretto EA, Zuge SS, Gaio G, et al. Utilização do brinquedo terapêutico para a criança que vivencia o processo de hospitalização: uma revisão narrativa. *Braz J Hea Rev.* 2021;4(1):382-98. doi: <https://doi.org/10.34119/bjhrv4n1-031>
12. Sousa CS, Barreto BC, Santana GAS, Miguel JVF, Braz LS, Lima LN, et al. O brinquedo terapêutico e o impacto na hospitalização da criança: revisão de escopo. *Rev Soc Bras Enferm Ped.* 2021;21(2):173-80. doi: <http://doi.org/10.31508/1676-379320210024>
13. Marino E, Pluciennik GA, organizadores. *Primeiríssima infância da gestação aos três anos: percepções e práticas da sociedade brasileira sobre a fase inicial da vida* [Internet]. São Paulo: Fundação Maria Cecília Souto Vidigal; 2013 [citado 2022 maio 27]. Disponível em: https://portaldeboaspraticas.iff.fiocruz.br/wp-content/uploads/2019/10/primeirissima_infancia.pdf
14. Aldoney D, Coe S, Mira A, Valdivia J. Mothers, fathers and educators' beliefs about play in Chilean preschool children. *Int J Play.* 2022;11(2):164-83. doi: <https://doi.org/10.1080/21594937.2022.2069346>
15. Lin X, Li H. Parents' play beliefs and engagement in young children's play at home. *Eur Early Child Educ Res J.* 2018;26(2):161-76. doi: <https://doi.org/10.1080/1350293X.2018.1441979>
16. Unidos pelo Brincar. *O brincar nas favelas brasileiras: relatório executivo de pesquisa* [Internet]. 2021 [citado 2022 maio 27]. Disponível em: <http://aliancapelainfancia.org.br/wp-content/uploads/2021/05/Pesquisa-Brincar-nas-Favelas-Brasileiras-deck-Webinar-Direito-do-Brincar.pptx-2.pdf>
17. Popp JM, Thomsen BS. A commentary on the importance of father-child play and children's development. *Infant Ment Health J.* 2017;38(6):785-8. doi: <https://doi.org/10.1002/imhj.21681>
18. Fundação Maria Cecília Souto Vidigal. *Primeiríssima infância creche: necessidades e interesses de famílias e crianças.* São Paulo: FMCSV; 2017.
19. REDCap-HCFMUSP [Internet]. São Paulo: 2020 [citado 2022 maio 27]. Disponível em: <https://redcap.hc.fm.usp.br/>
20. Filgueiras A, Pires P, Maissonette S, Landeira-Fernandez J. Psychometric properties of the Brazilian-adapted version of the Ages and Stages Questionnaire in public child daycare centers. *Early Hum Dev.* 2013;89(8):561-76. doi: <https://doi.org/10.1016/j.earlhumdev.2013.02.005>
21. Jeong J, Franchett EE, Oliveira CVR, Rehmani K, Yousafzai AK. Parenting interventions to promote early child development in the first three years of life: a global systematic review and meta-analysis. *PLoS Med.* 2021;18(5):e1003602. doi: <https://doi.org/10.1371/journal.pmed.1003602>
22. Fox SE, Levitt P, Nelson CA 3rd. How the timing and quality of early experiences influence the development of brain architecture. *Child Dev.* 2010;81(1):28-40. doi: <https://doi.org/10.1111/j.1467-8624.2009.01380.x>
23. Duch H, Marti M, Wu W, Snow R, Garcia V. CARING: the impact of a parent-child, play-based intervention to promote latino head start children's social-emotional development. *J Prim Prev.* 2019;40(2):171-88. doi: <https://doi.org/10.1007/s10935-019-00542-7>
24. United Nations International Children's Emergency Fund [Internet]. *MICS6 Questionnaires: questionnaire for children under five.* New York: UNICEF; 2020 [cited 2022 May 27]. Available from: <https://mics.unicef.org/tools>
25. Topothai T, Suphanchaimat R, Topothai C, Tangcharoensathien V, Cetthakrikul N, Waleewong O. Self-reported parental interactions through play with young children in Thailand: an analysis of the 2019 Multiple Indicator Cluster Survey (MICS). *Int J Environ Res Public Health.* 2022;19(6):3418. doi: <https://doi.org/10.3390/ijerph19063418>
26. Jeong J, McCoy DC, Yousafzai AK, Salhi C, Fink G. Paternal stimulation and early child development in low- and middle-income countries. *Pediatrics.* 2016;138(4):e20161357. doi: <https://doi.org/10.1542/peds.2016-1357>
27. Cuartas J, Jeong J, Rey-Guerra C, McCoy DC, Yoshikawa H. Maternal, paternal, and other caregivers' stimulation in low- and middle-income countries. *PLoS One.* 2020;15(7):e0236107. doi: <https://doi.org/10.1371/journal.pone.0236107>
28. Ministério da Saúde (BR). Secretaria de Atenção à Saúde. Departamento de Ações Programáticas e Estratégicas. *Política Nacional de Atenção Integral à Saúde da Criança: orientações para implementação* [Internet]. Brasília, DF: Ministério da Saúde; 2018 [citado 2022 maio 27]. Disponível em: <https://portaldeboaspraticas.iff.fiocruz.br/wp-content/uploads/2018/07/Pol%C3%ADtica-Nacional-de-Aten%C3%A7%C3%A3o-Integral-%C3%A0-Sa%C3%BAde-da-Crian%C3%A7a-PNAISC-Vers%C3%A3o-Eletr%C3%B4nica.pdf>
29. Shah R, Isaia A, Schwartz A, Atkins M. Encouraging parenting behaviors that promote early childhood development among caregivers from low-income urban communities: a randomized static group comparison trial of a primary care-based parenting program. *Matern Child Health J.* 2019;23(1):39-46. doi: <https://doi.org/10.1007/s10995-018-2589-8>
30. Ministério da Saúde (BR). Secretaria de Atenção Primária à Saúde. *Caderneta da criança: passaporte da cidadania – menina* [Internet]. Brasília, DF: Ministério da Saúde; 2020 [citado 2022 maio 27]. Disponível em: https://bvsm.sau.gov.br/bvs/publicacoes/caderneta_crianca_menina_5.ed.pdf

■ **Funding:**

This research was developed with financial support from the Early Childhood Science Center (*Núcleo Ciência pela Primeira Infância*).

■ **Authorship contribution:**

Funding acquisition: Patricia Marinho, Patricia Camargo.

Conceptualization: Katherine Solís-Cordero, Julia Carlla Abrantes Rocha, Patricia Marinho, Patricia Camargo, Elizabeth Fujimori.

Writing – original draft: Katherine Solís-Cordero, Julia Carlla Abrantes Rocha.

Writing – review & editing: Patricia Marinho, Patricia Camargo, Elizabeth Fujimori.

Investigation: Katherine Solís-Cordero, Julia Carlla Abrantes Rocha, Patricia Marinho, Patricia Camargo.

Methodology: Katherine Solís-Cordero, Elizabeth Fujimori.

Supervision: Elizabeth Fujimori.

The authors declare that there is no conflict of interest.

■ **Corresponding author:**

Katherine Solís-Cordero.

E-mail: katherine.soliscordero@ucr.ac.cr

Received: 06.01.2022

Approved: 11.18.2022

Associate editor:

Helena Becker Issi

Editor-in-chief:

João Lucas Campos de Oliveira