

# The make-believe and games as an intervention strategy for an infant with delay in child development

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**Abstract:** Introduction: Playing is an important activity for the child development because it enables concept acquisition, assimilation of social roles and the understanding of affective relationships. Objective: The use of playing to stimulate the global development. Method: As a participant, there was a four-year-old child, female, without a concluded diagnosis, with global developmental delay, mainly on gestural and oral language performance, whose behavior is characterized by the poor performance on exploration and manipulation of toys and objects. The study included the child development evaluations by the use of a specific tool – Operationalized Portage Inventory, before (pre-test) and after the intervention (post-test), planned with the offer of games and symbolic and imitation plays, Activities of Daily Living training and guidelines for the child’s mother. It was held 10 sessions of individualized care. Results: The increase of behaviors in all areas, especially in self-care and in games performance and imitation. Conclusion: It follows that a systematic plan, with the Activities of Daily Living training followed by playful and symbolic play can be an action strategy of Occupational Therapy for children with similar characteristics to those presented.

**Keywords:** *Occupational Therapy, Child Development, Playful Activities.*

## O faz de conta e as brincadeiras como estratégia de intervenção para uma criança com atraso no desenvolvimento infantil

**Resumo:** Introdução: O brincar é uma atividade importante para o desenvolvimento infantil, pois possibilita a aquisição de conceitos, a assimilação de papéis sociais e a compreensão das relações afetivas. Objetivo: Avaliar o uso do brincar para estimulação do desenvolvimento global. Método: A participante foi uma menina de quatro anos de idade, sem diagnóstico concluído, com atraso no desenvolvimento global, em especial na linguagem oral e gestual, com pouca exploração e manipulação de brinquedos e objetos. Realizaram-se avaliações com o Inventário Portage Operacionalizado antes e após a intervenção, planejada com oferta de jogos e brincadeiras simbólicas e de imitação, com desenvolvimento de habilidades para as Atividades de Vida Diária e orientações a mãe. Foram realizadas 10 sessões de atendimento individualizado. Resultados: Obteve-se melhora em todas as áreas, principalmente em autocuidado e no desempenho da brincadeira e imitação. Conclusão: O plano sistematizado, com o treino de habilidades para as Atividades de Vida Diária, seguido de brincadeiras lúdicas e simbólicas, pode ser uma estratégia de ação da terapia ocupacional para crianças com características semelhantes às apresentadas.

**Palavras-chave:** *Terapia Ocupacional, Desenvolvimento Infantil, Atividades Lúdicas.*

## 1 Introduction

For Parham and Fazio (2002), children can reveal physical, cognitive, and social skills through playing, as well as developing and interacting with the world.

Playing is full of a series of stimuli that foster the sensory-motor, cognitive development of the child's creativity, imagination and self-esteem (SANTOS; MARQUES; PFEIFER, 2006).

Piaget (1970) points out that child development occurs in four stages: sensory-motor, from zero to one year and a half or two; preoperative, from one year and a half or two to seven years; concrete operations, from seven to twelve years; and formal surgery, from twelve years onwards. Piaget believed that all normal children go through the stages in the same order since each stage is constructed from the achievements of the previous stage (NEWCOMBE, 1999).

Babies acquire knowledge through interaction with objects. In the preoperative stage, the children acquire the ability to think about objects and events that are not present in the environment. They begin to play symbolically, that is, it causes an object to function as if it were something else. At the stage of concrete operations, the children are able to operate on the information. They achieve decentering ability, realizing that objects can have more than one dimension or attribute. At the stage of formal operations, children can reason about hypothetical problems, developing the ability to think about possibilities. It is the most advanced stage of cognitive development, which extends through adult life (NEWCOMBE, 1999).

When playing, the individual internalizes behaviors that generate transformations necessary for their development. Playing intensifies children's perception, which favors learning throughout growth (ROJAS, 2007).

The characteristics of playing are modified throughout the life of the child. The games in the first years of life are fundamental for the acquisition of future concepts, as it contributes to the maturation necessary for development.

According to Newcombe (1999), by the middle of the second year, children begin to impose new functions on objects. They no longer need to have the function they actually have, and they can represent others. At the end of the second year, they begin to direct the action to another person or toy, no longer being self-oriented, that is, they begin to put the toy in their place, as active agents, during the game, besides to starting to interact with other

children, which contributes to acquiring staging, since specific roles and routines can be established. The role of the toy changes at this stage becoming a symbolic agent in play.

For Rojas (2007), a concept to be learned requires an intense mental activity by the child, besides the information received. The symbolic aspect of playing works in the construction of thought because the child uses symbols as ways to interpret the real world. Thus, "make-believe" is important for the development of language, skill, and competence, since it constitutes complex linguistic interactions that promote children's communication.

Piaget (1970) places intelligence as a process of balance between assimilation and accommodation. In the assimilation, there is an incorporation of the external reality by the individual in his mental structures. The accommodation is a result of the pressures exerted by the environment, causing a new organization to incorporate new concepts. Both assimilation and accommodation are forms of adaptation. Playing is identified by the priority of assimilation over accommodation. Imitation is mainly due to accommodation (NEWCOMBE, 1999).

From the age of two, the child begins to play symbolically (NEWCOMBE, 1999). This type of playing is characterized by the "make-believe", so the child begins to represent situations and relations of the world around him, stimulating intelligence and developing his creativity (CUNHA, 2007).

The symbolic game highlights imitation. The ability to assimilate subtle inflections, which usually occur with the imitation of the behavior of the parents or of people living in their home is shown (BRAZELTON, 1994). Imitation is developed between the first and third years old, and it is a way in which the child learns and perfects new actions. They usually imitate actions that have received approval. In the third year of life, they begin to imitate specific individuals, especially parents, as they represent the most continuous source of emotional excitement (NEWCOMBE, 1999).

Through playing, the child relates an experience, imagination, and language. In the beginning, the child acts independently of the speech. Through development, action and speech organize thought. Finally, the internalized speech is capable of organizing and planning future actions. In the game, the child can experience these three stages (FERREIRA, 2006).

Children play and communicate from an imaginary situation, assigning meanings to actions and objects. This can be identified by a singular form of language,

through verbal or signs and gestures proper to play (WAJSKOP, 1995). For the author, when playing, the child development can reach more complex levels due to the possibilities of peer interaction in an imaginary situation and the negotiation of rules.

The game is the main activity of childhood. This is due not only to the frequency of use that children play but mainly because of its influence on child development (CORDAZZO; VIEIRA, 2007). In this way, it is essential in the life of any child to play, even if it is when the game responds to a need for therapeutic intervention.

Also for Cordazzo and Vieira (2007), playing is a rich source of communication, because even when the child plays alone, by “pretending”, imagining that he is talking to someone or his own toys. With this, language is developed.

When playing, the action is combined with language to organize the child’s thinking (FERREIRA, 2006).

Playing enables the experience of activities of daily living (ADL). Occupational Therapy Practice Structure: domain & process, in its third edition, occupation is the various types of daily activities in which individuals, groups or populations are involved, including ADL, Instrumental Activities of Daily Living (IADL), rest and sleep, education, work, play, leisure, and social participation. These activities are “[...] fundamental to living in the social world; they allow for basic survival and well-being” (CHRISTIANSEN; HAMMECKER, 2001, p. 156 apud AMERICAN..., 2015, p. 19). The daily activities characterize the place and role of the child in society (SILVEIRA; JOAQUIM; CRUZ, 2012).

One of the functions of the occupational therapist is to help people engage in valued and meaningful occupations to reach their health and well-being (CREPEAU; COHN; SCHELL, 2011), and ADLs play an important role in everyday activities of the individuals (MATSUKURA; MARTURANO, 2001; SILVEIRA; JOAQUIM; CRUZ, 2012).

Thus, this study aimed to evaluate an intervention program in occupational therapy to stimulate a child with a delay in child development, focusing on the use of symbolic and imitation games.

## 2 Methods

The research was set up as a quasi-experimental study with an A-B design with pre-test and post-test (COZBY, 2003), and the initial and final repertoire of the child after the intervention in occupational therapy was evaluated.

### 2.1 Participant

The participant was one child named Laura (fictitious name), female, four years old, referred to the occupational therapy service for presenting characteristics indicative of a delay in overall development, especially in the performance of oral and gestural language without a diagnosis completed. Laura’s game was characterized by little manipulation and exploitation of objects, agitation and little involvement with activities. No examination found visual, auditory or genetic alteration. She attended a private school two years ago, in the city where she lives with her father and mother. The family income came from his father’s job. The mother was the main caregiver of the child, dividing this task during the week with a professional at home.

### 2.2 Place

The study was held in a Health School Unit of a public university in the interior of the State of São Paulo.

### 2.3 Instrument

To evaluate the child’s development, the Operational Portage Inventory was used: intervention with families (WILLIAMS; AIELLO, 2001). Coming from the Portage Guide to Pre-School Education, this instrument is a guide for evaluation and intervention with families of children from zero to six years old, allowing the identification of the child’s repertoire in five areas of development (motor, cognition, language, socialization and self-care development) and provide instructions and guidance to parents/caregivers about the identified demands and characteristics. Its structure includes 580 behavioral items related to the areas of interest, distributed in age groups: specific infant stimulation for infants; up to 1-year-old; from 1 to 2 years old; from 3 to 4 years old; from 4 to 5 years old; and from 5 to 6 years old.

The score is performed for each given answer, necessary the occurrence of at least 3 correct answers in 4 attempts. Also, the child’s response should occur 30 seconds after the beginning of the attempt (verbal instructions, model, toy offering, among others) to be considered correct. The evaluation of the Operational Portage Inventory must be started in an age range before the child is, but it is possible to start the evaluation in the age group in which the evaluator deems appropriate. As the performance is found to be insufficient, the age group goes back.

The criterion for stopping retraction involves the occurrence of at least fifteen (15) consecutive items for which there are correct answers. It is recommended to terminate the evaluation of a certain area when the child has 15 (fifteen) consecutive incorrect answers (WILLIAMS; AIELLO, 2001).

The calculation of the scores occurs for each area of development and for each age group, through the ratio between total correct answers and total items evaluated. It is possible to calculate the percentage of correct answers and even the average per area, adding the respective ratios and dividing the number obtained by the number relative to the age groups of the chronological age of the child that indicate the performance of the child with the expected in each track of the instrument. When there are less than 15 items within a given age group, and all of them present missing answers, the score is considered as zero.

It is an instrument that can be used by professionals who act in childhood, and to the parents/caregivers of the child.

## 2.4 Ethical considerations

The project was approved by the Human Research Ethics Committee of the Federal University of São Carlos. The Health School Unit and the responsible ones for the child agreed with the study.

## 2.5 Procedures

After the pre-test was performed through the application of the Operational Portage Inventory, the individual sessions of 50 minutes of duration were started each week for three months, in a total of 12 sessions. The attendances were held in rooms of the Unit Health School and in the park in an external area. The rooms had space for the game, a table and a mirror fixed to the wall. In each attendance, there was training of skills for Activities of Daily Living (ADL), followed by symbolic and imitation games, such as dressing princess fantasy, doll, bathing and

feeding the doll, playing with horse “upa upa”, imitate the removal and placement of footwear, throw a ball and kick it, plus use of children’s books, round and playful games, such as: finding hidden objects in a basin with noodles, play set, wooden board with geometric shapes, locking blocks, velotrol, activity circuit, such as somersault, climbing and descending stairs, running and jumping, ball and bowling.

The training of one or more ADL occurred in all the visits due to the results of the pre-test evaluation that in the area of self-care the child presented less than 50% of the behaviors expected for the age group of 2-3 years old. In this way, ADL skills related to clothing, personal hygiene and food were developed. In some visits, there was the “training” in front of the mirror, to assist in the experience and learning of the activity.

In most of the consultations, the instructions given to the child were characterized as verbal cues and model-demonstration so they mimicked actions during the games and simulations of ADL.

## 2.6 Data recording and analysis

The applications of the Operational Portage Inventory in the pre-test and post-test were recorded in their own protocols, and the intervention stage had their data collected in field journals. The analyses of the instrument occurred in descriptive statistics.

## 3 Results

The pre-test with the Operational Portage Inventory was started at 2-3 years old since the child had a significant delay in development. Table 1 shows the percentage of successes per area of development, socialization, cognition, language, self-care and motor development for age groups that comprise the first five years of life. The “-” sign indicates that the assessment has been finished due to 15 missing consecutive answers.

**Table 1.** Percentage of correct answers per development area in the pre-test.

Age Group (years)	Percentage of correct answers per area				
	Socialization	Cognition	Language	Self-Care	Motor development
0-1	75	92.86	70	100	84.44
1-2	60	50	16.67	75	77.7
2-3	50	18.75	0	40.74	41.18
3-4	0	-	-	-	40
4-5	-	-	-	-	25

Source: Elaborate by the author.

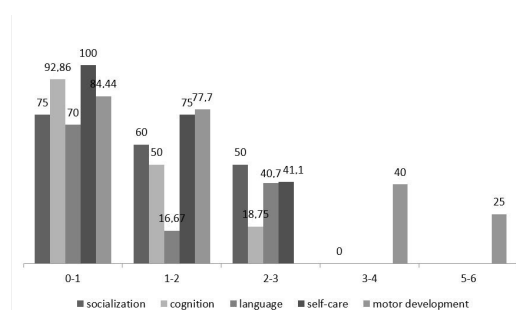
From Table 1, it can be seen that Laura presented more than half of the behaviors for the 0-1 year age group in all areas of development. It is noted that the higher the age group, the lower the percentage of behaviors acquired by the child in the five developmental areas, especially in Language.

In the areas of Socialization and Motor Development, it was possible to extend the evaluation, being possible, in the latter, to reach the age group of 4-5 years. On the other hand, the evaluation in the Language area was interrupted in the age group of 2-3 years, suggesting a greater commitment of this area of development.

Next, Figure 1 shows the percentage of correct answers in each age group regarding socialization, cognition, language, self-care and motor development.

It can be seen in Figure 1 that in the age group of 2-3 years, Laura presents significant deficits in relation to the 0-1 and 1-2 years age groups.

Calculating the score obtained in each area of development, it is observed that Self-care is the area with the highest percentage of behaviors that the child possesses (71.91%), and Language is the area with the lowest percentage of behaviors that Laura possesses (28.89%). However, it was not possible to reach the age group of 3-4 years old in the area of



**Figure 1.** Percentage of correct answers in each age group, according to the area of development in the pre-test. Source: Elaborate by the author.

Self-care. In the area of Motor Development, the child presented a minimum difference of behaviors than in the age group of 2-3 years in relation to the Self-care area. However, it was possible to extend the evaluation until the age group of 4-5 years.

Thus, objectives were established for the intervention with Laura in the work with discrimination and location of body parts and in performing activities of daily living (ADL), such as clothing, food, and personal hygiene.

After the pre-test, there were 10 consultations performed weekly, lasting 50 minutes. As presented in the procedures, each attendance was initiated with the training of a skill of one or more ADL, followed by a game.

Considering the relation between the symbolic game and the acquisition of language and cognition, there is an important difference. In Laura's case, they are between these aspects and the other aspects of child development, characterizing them with significant commitment in these areas. In this way, these aspects were primarily stimulated with the program of games and symbolic games.

After the intervention period, the application of the Operational Portage Inventory for post-test was again applied.

The post-test evaluation was initiated at the age of 3-4 years, with the hypothesis that, after the stimulation period, Laura obtained gains in its development, which led the researcher to begin the evaluation in an earlier age of Laura's age, which is in accordance with the instrument.

Table 2 shows the percentage of correct answers for the development area: socialization, cognition, language, self-care and motor development.

In Table 2, there are the post-test evaluation results. It was possible to advance to the age group of 4-5 years in Self-care area, and to the age group of 5-6 years in the areas Socialization and Motor Development.

**Table 2.** Percentage of correct answer per development area in the post-test.

Age Group (years)	Percentage of correct answers per area				
	Socialization	Cognition	Language	Self-Care	Motor development
0-1			90		
1-2		60	27.77		
2-3	62.50	31.25	6.66	74.07	58.82
3-4	16.66	0	0	13.33	46.66
4-5	22.22	-	-	8.69	31.25
5-6	9.09	-	-	-	17.24

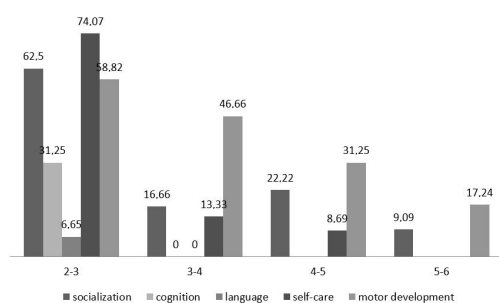
Source: Elaborate by the author.

In the areas of cognition and language, Laura did not have any behavior of the age group of 3-4 years. Therefore, as indicated in the instrument, she did not advance for the age group of 4-5 years. Therefore, as a result of poor performance in the age group 2-3 years of these areas, the evaluation went back to the age group 1-2 years. In the Language area, the evaluation returned to the 0-1 year age group.

Figure 2 shows the percentage of correct answers in each age range of the post-test evaluation.

Figure 2 shows that the area of self-care is the one that presents the highest percentage of behaviors that Laura has in the age group of 2-3 years, while Language is the area that presents the lowest percentage in the same range age.

In the age group of 3-4 years, the child has less than 50% of the behaviors expected for their development in this age group in the areas of Socialization, Self-care and Motor Development, and she did not present any of the behaviors expected for this age group in the areas of Cognition and Language. The percentage of behaviors that Laura had in the Cognition and Language areas in the 0-1 year and 1-2 year age groups, which are the most affected areas was the only one in which the evaluation regressed up to



**Figure 2.** Percentage of correct answers in each age group, according to the area of development in the post-test. Source: Elaborate by the author.

these age groups. This shows the delay in Laura's development, especially in this area.

It can also be inferred that in the area of Socialization, in which the evaluation reached the expected level for the 5-6 year age group, Laura showed more behaviors in the age group (4-5 years) than in the prior age group (3-4 years). In the pre-test evaluation, Laura did not have any expected behavior for the age group of 3-4 years.

Table 3 presents the comparison between the percentage of behaviors that the child presented in the pre-test and in the post-test. The use of the hyphen indicates the non-evaluated age groups from the performance presented by Laura.

Due to the pre-test and post-test evaluation being complete in the 2-3 years age group, unlike the other age groups, the results of both evaluations (pre-test and post-test) were compared in this group to analyze the amount of behavior that Laura presented before and after the intervention. Thus, it is possible to observe an increase in the percentage of behaviors that the child has.

As in the pre-test evaluation, Motor Development was the area in which Laura presented a higher percentage of the behavior of the age groups of 3-4 years and 4-5 years.

From the results presented, gains can be seen in the overall development of Laura, which can be observed through the evaluation and improvement in the performance of daily activities of food, clothing, motor development and socialization. In addition, it was possible to observe changes in the performance of play and imitation.

With the analysis of the data, it is possible to observe that Laura improved her playing, being able to stay focused with her attention for longer in the game, improved and acquired abilities in self-care activities, expanded play repertoire, developed imitation more, incorporated notions of body, gaining gains in its overall development.

**Table 3.** Comparison between the percentage of behaviors that the child presented in the pre-test and post-test evaluations.

Age Group (years)	Percentage of correct answers per area in the pre-test and the post-test									
	Socialization		Cognition		Language		Self-Care		Motor development	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
0-1	75	-	92.86	-	70	90	100	-	84.44	-
1-2	60	-	50	60	16.67	27.77	75	-	77.7	-
2-3	50	62.50	18.75	31.25	0	6.66	40.74	74.07	41.18	58.82
3-4	0	16.66	-	0	-	0	-	13.33	40	46.66
4-5	-	22.22	-	-	-	-	-	8.69	25	31.25
5-6	-	9.09	-	-	-	-	-	-	-	17.24

Source: Elaborate by the author.

## 4 Discussion

Development takes place globally, that is, all areas or fields of development work together. One area and/or field of development contributes to the acquisition of new skills from another area, creating a link that unites the different faces of development (PALHARES et al., 2000).

For Freitas (2010), as Piaget referred, intelligence occurs through an internal functioning triggered from the child's interaction with the world around him. This operation takes place through the assimilation of an external element in a sensory-motor scheme or structure and accommodation, that is, modification of a scheme or structure. In this study, the playfulness and "training" of ADL skills sought to provide the experience with games appropriate to the child's age, to stimulate development in a global way, to allow the acquisition of notions of body schema and the learning of self-care activities essential for Laura's life.

The acquisition of ADL did not occur according to a "repetition" of tasks, so the child learned all the ADLs and performed them independently, but it occurred that the child could experience these activities and reproduce them in symbolic games, as with a doll. Generally, the initial ADL was reproduced during the symbolic game with the doll, so Laura could experience and learn these activities. The main ADLs were focused on the "training" of food and clothing. In the contact of body parts with the surface of the mirror (hands, mouth, tongue etc.), the child approaches her moving image; an image that the child gradually appropriates (BARTH, 2007).

One of the playful games was the "activity circuit", in which the child should follow a sequence of games, from the example of the researcher, such as going inside a tunnel, going around, climbing stairs, sliding into a toy for it, running and jumping. In this way, it was possible to stimulate motor, cognitive and language development. Even though imitation, she could experience a new repertoire of games.

Early childhood is a period of imitation, and the ability to learn new behaviors through observation is considered an important learning tool in the development of children's behavioral repertoires (ROGERS et al., 2010).

A study by Santos, Marques and Pfeifer (2006) points out that, besides promoting autonomy, playing also allows the child to develop language, thought, socialization and self-esteem, considered as indispensable to the physical, emotional and

intellectual development of the human being. According to the results of the pre-test and the follow-up of the child, it is possible to notice an impoverished experience of the game.

As for the symbolic games, Laura was encouraged to imitate actions with dolls, with pans, cutlery, plates and toy stoves. According to Zorzi (2000), the symbolic function refers to the ability to represent or use symbols. Language, symbolic toy or game of "make believe" and deferred imitation are symbolic behaviors that usually appear in the second year of the child's life. Deferred imitation is the ability to imitate or reproduce models that have been observed in past situations and which are later evoked.

Laura imitated the researcher by moving the little pan on the toy stove after about 5 minutes of playing, demonstrating the existence of a latency for her to present the imitation behavior, suggesting possible deficits in the delayed imitation, linked to the representation, since, according to Piaget (1970), it has great importance in the development of representational thinking. The child demonstrates an ability to internally imitate a series of models as images. Thus, imitation begins to reach the level of representation (ROGERS et al., 2008).

When imitating the researcher to give food to the doll in the pre-test, for example, Laura carried the fork to the forehead of the doll. According to Freitas (2008), an indispensable element in the formation of the personality of the children is the representation their own body. It involves a conceptual framework that integrates brain, movement, sensation, perception, vision, among other organs and processes and its role in structuring both body image and body representation. The body scheme begins to be developed between 7 and 8 months of age. At 4 years old, the children have already undergone various corporal experiences and they are able to locate the different parts of their body, in another person, and to portray them graphically (ROSSIT, 2009). Laura's behavior by not imitating the researcher feeding the doll through her mouth suggests that the child does not present her integrated body schema. The representation she has of her body constitutes an indispensable element in the formation of the personality of the child. The corporal scheme corresponds to the totalization and constant unification of the organic sensibilities, and particularly of the postural impressions (FREITAS, 2008).

The corporal scheme is nothing more than an elementary condition of the act. It is limited to kinesthetic experiments and postural structures. Thus, it is important that the child is aware of his or her body in space for the formation of the body

schema. Through imitation, Laura began to identify and recognize some parts of her body.

Thus, while playing, Laura was enabled to experiment and develop her language, enriching her vocabulary, testing her limits and overcoming her fears (ZATZ; ZATZ; HALABAN, 2006), as well as strengthening the development of her body schema.

## 5 Conclusion

From the results obtained, it is worth noting that using resources such as playing to stimulate the development of children with delays or even deficits is appropriate. As for the procedures, it is possible to infer that, from the offer of symbolic games and imitation, besides the playful games, planned from the child's potentialities and the results of the pre-test, it was possible to stimulate their development.

It can be concluded that a systematized plan, with the "training" of Skills for Activities of Daily Living, followed by playful and symbolic games, contributed to the results achieved.

The repeated ADLs during all the visits served not only to Laura to try them out, but also contributed to the better performance in the game, since many of them were used during the symbolic games such as clothing and feeding.

Therefore, it is noticed that the participant obtained gains from the games. This evidences what the literature points out about playing and its influences on child development, although some aspects can be considered as limiting the result of the work, such as the reduced time of intervention, the unavailability of follow-up of the development to verify the permanence and generalization performance, among others. Despite these aspects, there is the conviction, based on the results obtained, that this way of uniting Activities of Daily Living and symbolic games is stimulating for global child development.

The continuity of this study is necessary to verify the trend found so far, not only regarding the development of this participant but also for the proposal of new studies that aim to characterize this intervention practice in occupational therapy and related areas.

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### Author's Contributions

Regina Helena Vitale Torkomian Joaquim contributed in the conception and orientation during the research process, in the elaboration of the text and its critical review. Fernanda Rodrigues da Silva contributed to the bibliographic review, data collection, and analysis, description of the results and elaboration of the text. Gerusa Ferreira Lourenço contributed to the critical review of the text and data analysis. All authors approved the final version of the text.

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