



Original Article

Center-Based Care and Language Development: A Pilot Study on 6-15 Month-Old Persian-Speaking Children

Mohammad Majid Oryadi-Zanjani^{1,2}, Maryam Vahab^{1,2*}, Javad Rasouli³, Somaye Ghasemi¹, Atefeh Yazdizade¹

¹Department of Speech Therapy, School of Rehabilitation Sciences, Shiraz University of Medical Sciences, Shiraz, Iran

²Rehabilitation Sciences Research Center, Shiraz University of Medical Sciences, Shiraz, Iran

³Department of Epidemiology, Urmia University of Medical Sciences, Urmia, Iran

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ABSTRACT

Background: Although it is usually recommended that children begin care after their second or third year, some employed parents have to enroll their children in childcare from under the age of 6 months in Iran. Regardless of when children enter care parents and experts are concern about how childcare affects children's language, social and intellectual development. The aim of this study was to assess the language development in the 6-15 month-old Persian-speaking children enrolled in center-based care.

Methods: This was a descriptive, cross-sectional study. The sample size comprised of 13 Persian-speaking 6-15 month-old children who were recruited through consecutive sampling from the Namazi childcare center in Shiraz, Iran. The child's development was assessed by using two assessment tools including the Ages and Stages Questionnaire and the Rossetti Infant-Toddler Language Scale. Descriptive statistics were employed in order to presentation of the findings.

Results: Overlay, the results showed that all children could successfully achieve the nonverbal and verbal communication and interaction behaviors.

Conclusion: Based on the findings, the quality of childcare centers and the quality of parents-child interaction may be two crucial factors in children's language development. Also, the Rossetti Infant-Toddler Language Scale is a useful assessment tool for Persian-speaking children.

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Introduction

According to the UNICEF, the period between birth and 8 years of life called "early childhood" is a period of tremendous growth and development due to high brain plasticity in the first three years, and high opportunity for optimal development up to 8. So, this world organization has emphasized that "early childhood care and education" (ECCE) is a human right [1]. As Clarke-Stewart and Miner mentioned, center-based care

is a kind of child daycare that children "are cared for in an institutional setting where children of different ages are typically divided into different classes" [2]. Although it is usually recommended that children do begin care after their second or third year, some employed parents have to enroll their children in childcare from under the age of 6 months in Iran. The UNICEF has declared that "Children who have participated in high quality ECCE demonstrate considerable gains in social, educational, health and intellectual spheres, distinctively different from those who have not participated in ECCE programs" [1]. Regardless of when children enter care, parents and experts are concern about how childcare affects

*Corresponding author: Maryam Vahab, MSc of Speech Therapy, Department of Speech Therapy, School of Rehabilitation Sciences, Shiraz University of Medical Sciences, Shiraz, Iran

E-mail: vahabm@sums.ac.ir

children's language, social and intellectual development [2]. Clarke-Stewart and Miner stated that "empirical research suggests that childcare experiences can influence children's development in both positive and negative ways" [2]. Following a systematic review of articles, Rogers et al. concluded that of the 346 eligible articles that addressed causal factors on child language development, 13% focused on family/caregiver qualities [3]. Physical and emotional parent-child interaction is known as an essential factor for optimal child development, because children first learn about communication within the home [2,4]. Based on social interactionism, a high-priority aspect of language learning experience is social interaction with another person [5]. So, nonverbal and verbal communication between parents and their children throughout a day, specifically during nutrition time such as breast feeding, can provide a high quality conditions for the development of child [2]. Children's early communicative behaviors such as eye contacts, joint attention, and turn taking are necessary for successful communication throughout the life span [6]. As Hoff confirmed, "children's use of communicative gesture predicts the language development that follows" [5]. Besides, prelinguistic speech behaviors including vocal play and babbling appear to have some connection to later lexical development [6]. Therefore, it seems that children need a lot of time spent on them in order to acquire nonverbal and verbal behaviors optimally. Children who enrolled in center-based care, however, may miss the main part of interaction and attachment with their parent due to they are in childcare averagely 39 h per week. If so, it can be expected that children who are enrolled in nursery school from early ages may be at risk for language delays. Recently, a systematic review of studies of child language development in Persian-speaking children in Iran has appeared that has reviewed research addressing the language development of Persian-speaking children enrolled in center-based [7]. So, the aim of this study was to assess the language development in the 6-15 month-old Persian-speaking children enrolled in center-based care.

Methods

This was a descriptive, cross-sectional study. Informed consent was obtained from the parents of each child participating in the study and the research protocol was approved by the Ethics Committee of Shiraz University of Medical Sciences. The sample size comprised 13 Persian-speaking 6-15 month-old children include 6 boys and 7 girls who were recruited through consecutive sampling from the Namazi childcare center in Shiraz, Iran. The inclusion criteria were 6-15 months age, being enrolled in the nursery school from under 3 months old, and not having any gross developmental disorder. All children would spend about 8 hours at the nursery school daily. At first, the general health records and interview with parent/nurse were used in order to confirm the inclusion criteria for each child. Then, the child's development was assessed by using two assessment tools include the Ages and Stages Questionnaire (ASQ) [8] and the

Rossetti Infant-Toddler Language Scale [9]. The ASQ is a parent-report, criterion-referenced instrument which assesses Communication, Gross Motor, Fine Motor, Problem-Solving, and Social-Personal domains. The Persian version of the ASQ is a valid and reliable screening tool for evaluation of 4-60 month-old Iranian children's development [8]. The Rossetti Infant-Toddler Language Scale is a comprehensive tool in order to assess the preverbal and verbal aspects of communication and interaction in the young child. The scale is a criterion-referenced instrument that evaluates Interaction-Attachment, Pragmatics, Gesture, Play, Language Comprehension, and Language Expression. According to the scale manual, behaviors were scored in three ways: directly elicited from the child, directly observed, or reported by parent/caregiver to credit the child's performance. All carry equal weight when scoring the scale. The test items were considered "passed" if the behavior in question was noted through observation or through direct elicitation. When a behavior was not observed or elicited during the assessment, the caregiver was asked about the behavior. The basal levels of a child's performance were obtained for each developmental domain. The results reflected the child's mastery of skills in each of the areas assessed at three-month intervals across developmental domains tested [9]. The examiners were two trained speech-language pathologists who administered the Rossetti Infant-Toddler Language Scale for each child.

Additionally, a questionnaire was made by the first and second authors which included some related factors with the child's communication development. The questionnaire was provided to 10 expert speech-language pathologists in order to confirm its content validity and the final version of the questionnaire was prepared during some modifications. The questionnaire was fulfilled by the examiners through interviewing with each child's parent. Descriptive statistics were employed in order to present the findings.

Results

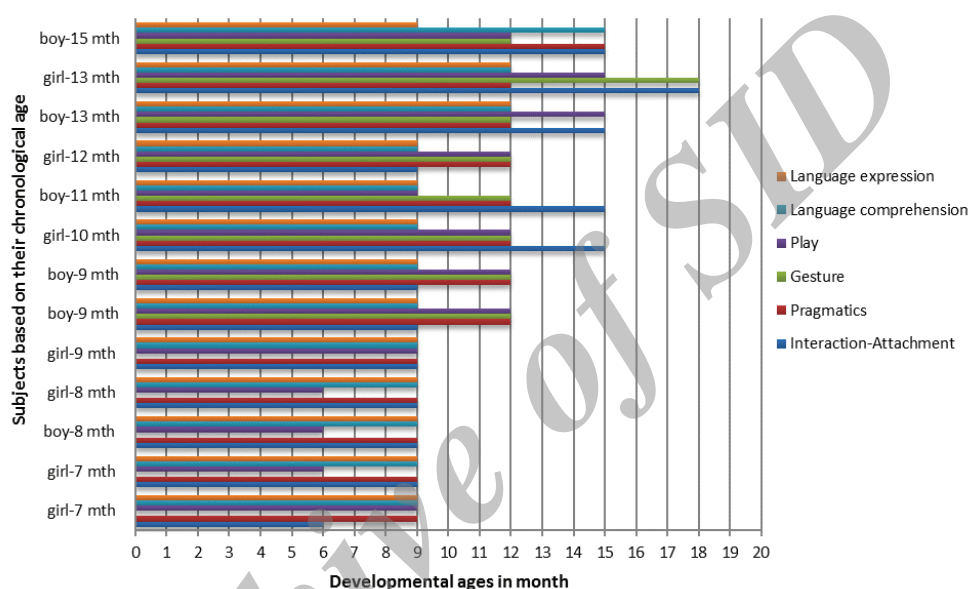
Overlay, the results showed that all children could successfully achieve the preverbal and verbal communication and interaction skills. Table 1 exhibits each child's development including communication and social-personal domains according to the ASQ.

Figure 1 illustrates the base levels of each child's performance in the preverbal and verbal aspects of communication and interaction include interaction-attachment, pragmatics, gesture, play, language comprehension, and language expression domains based on the Rossetti Infant-Toddler Language Scale.

Table 2 shows maximum, minimum, mean, and standard deviation of some environmental factors in the children include time of being in nursery school, time of mother's work, time of father's work, time of TV watching, time of book reading, time of playing with digital devices, time of playing with mother, and time of playing with father.

Table 1: Each child's development based on the ASQ

Case	Age	Communication		Social-personal	
		Score	Status	Score	Status
1	7	54.00	Normal	55.00	Normal
2	7	60.00	Normal	60.00	Normal
3	8	45.00	Normal	60.00	Normal
4	8	48.00	Normal	54.00	Normal
5	9	60.00	Normal	60.00	Normal
6	9	30.00	-1SD	52.50	Normal
7	9	60.00	Normal	60.00	Normal
8	10	60.00	Normal	60.00	Normal
9	11	52.50	Normal	45.00	Normal
10	12	55.00	Normal	60.00	Normal
11	13	54.00	Normal	50.00	Normal
12	13	54.00	Normal	54.00	Normal
13	15	60.00	Normal	55.00	Normal

**Figure 1:** Basal levels of the subjects's performance in the developmental domains based on the Rossetti Infant-Toddler Language Scale**Table 2:** The information of some environmental factors in the children

Factor	Number	Min	Max	Mean±SD
Time of being in center (in hours)	13	21	42	39.31±6.10
Time of mother's work (in hours)	13	4	8	7.15±1.62
Time of father's work (in hours)	13	8	12	11.23±1.53
Time of TV watching (in minute)	13	0	60	32.31±27.28
Time of playing with DD* (in minute)	13	0	60	17.31±16.02
Time of book reading (in minute)	13	0	45	3.46±12.48
Time of playing with mother (in minute)	13	30	90	60.00±12.25
Time of playing with father (in minute)	13	15.00	60.00	56.54±12.48

* Digital devices

Discussion

As mentioned earlier, previous studies have shown both positive and negative effects of childcare experiences on children's development [2]. According to the outcomes of the ASQ, all children developed normally in communication and social-personal domains. In addition, the findings were verified by the children's performance

on the Rossetti Infant-Toddler Language Scale. The results of the Rossetti test were, however, specific to the development of the nonverbal and verbal communicative behaviors in the children include interaction-attachment, pragmatics, gesture, play, language comprehension, and language expression domains. It appeared that 12 of the children not only did not show any delays in their communicative development, but also had a better

progress than their age match in some developmental aspects. Only, one of them, the boy aged 15 months old, revealed about 6 month delay in his expressive language development specifically. He was normal in the other domains. Indeed, as Clarke-Stewart and Miner explained, “only when care is of very poor quality have researchers found that scores on tests of perception, language, and intelligence were lower for children attending a childcare center than for children of comparable family backgrounds being cared for by parents at home” [2]. On one hand, the Namazi childcare center that affiliated to the Shiraz University of Medical Sciences is a high quality center. On the other hand, the findings indicated the normal development of the children enrolled in the center. So, the results of this study confirm the previous findings. Based on the study, we can conclude that there may be a correlation between the quality of childcare center and children’s language development. In addition, childcare center’s quality may be more crucial than child’s age of enrollment in childcare center. Consequently, it is recommended that the next researches will be conducted with bigger sample sizes and in different childcare centers in order to evaluation of such a correlation.

Additionally, the children’s scores in other environmental factors revealed that the children spend more time on playing with mother (averagely 60 min) and with father (averagely 56 min) than on TV watching (averagely 32 min) and computer playing (averagely 17 min). It is emphasized that TV watching under the age of 2 years, especially without interaction with an adult, can cause some delays in language development [4]. So, it can be concluded that the quality of parents-child interaction was high enough to compensate the lack of parents-child interaction during being in childcare center.

Regarding the comparison between two applied assessment tools, the ASQ is a screening scale that can determine children’s communication development totally. The Rossetti Language Scale is focused on the communicative behaviors. It provides an exact operational description for each behavior, so the examiner can identify child’s developmental strength and weak points by using the scale. Consequently, we found the Rossetti Infant-Toddler Language Scale is a useful assessment tool for

Persian-speaking children. Therefore, as there is not such a tool for Persian-speaking children, it is recommended that further similar studies be conducted in order to adapt this assessment tool for the children.

Conclusion

Based on the findings, the quality of childcare centers and the quality of parents-child interaction may be two crucial factors in children’s language development. Also, the Rossetti Infant-Toddler Language Scale is a useful assessment tool for Persian-speaking children.

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Conflict of Interest: None declared.

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