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MATERNAL EMPLOYMENT, FAMILY STRUCTURE, AND INFANT PSYCHOMOTOR DEVELOPMENT: A COMPLEX RELATIONSHIP

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Abstract

The absence of the father in poverty contexts has been related to difficulties in the exercise of parenting, affecting negatively infantsmental health. Because of the recent social changes, in respect with the participation of women in work and the growth in the number of woman who are managing their homes alone, there has been an increasing interest in comprehending the situation of boys and girls that are entering nurseries and playgrounds in a younger age. This article studies the relation between the infant psychomotor development, the mothersworking day and the family configuration, in a sample of 199 children between ages 8 to 24 months, in a low socioeconomic level who attend nurseries in Santiago, Chile. The psychomotor development of the infants was evaluated with the Scale of psychomotor development 0-24 months (EEDP) of Rodríguez, Arancibia and Undurraga (1976). The information regarding the family configuration and the working day was extracted from the interview to the parents made by the person responsible of the institution. The results show that children who attend nurseries and whose mothers work a complete working day and who come from a single-parent family, score meaningfully lower in psychomotor development than the children whose mothers have a complete working day, but come from a bi-parental families.

Keywords: mono-parenting; mothers working day; psychomotor development



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Introduction

The first years of life are of great importance for child development and the evaluation of psychomotor development constitutes a contribution to the early detection of risks in vulnerable populations. This evaluation allows us to conceptualize the behaviors observed in development according to a broad classification that ranges from mechanical and automatic reflex movements to complex coordinated movements (Garaigordobil, 1999). For Martínez (2000) the evolution of the capabilities for body movement has a fundamental importance in the overall behavior of the child since it is through movement that he or she will come into contact with people, objects and space. As Piaget (1969) pointed out, in the early years action is thought and thought is action. Various studies have confirmed the relationships between psychomotor

Various studies have confirmed the relationships between psychomotor development and intellectual development, in particular, with non-verbal intelligence (Cruz Sáez, 1996). The potential role of motor skills in perceptual development and in the development of sequences of other domains, necessary for children's learning, has also been described (Bushnell & Boundreau, 1993).

The literature shows that psychomotor development is highly influenced by family and sociodemographic variables, particularly by low socioeconomic level (Halpern, Giugliani, Victora, Barros, & Horta, 2002), and characteristics associated with this social group, such as the low education of parents or caregivers (Lira, 1994; Garibotti,

Comar, Vasconi, Giannini, & Pittau, 2013) and overcrowding inside the home (Widma-yer *et al.*, 1990). Other variables whose influence on psychomotor development have been suggested are the mother's age (Lira, 1994), the mother's working hours (Rodriguez, 2006) and the family configuration,



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specifically the presence of the father in the family system (Torralba, Cugnasco, Manso, Sauton, Ferrero, O'Donnell, ... Carmuega, 1999).

In recent years, women's labor participation has increased. Particularly, in the 1980s there was a dramatic increase in women with young children entering the workforce (Shank, 1998). However, in Chile its participation has been distributed unequally between the different income quintiles. Thus, only one in four women in the poorest quintile works outside the home, while in the highest income quintile, half of the women work for pay (National Women's Service, 2008). In Chile, the insertion of women into the labor market is relatively late and one of the lowest in Latin America (Ministry of Labor of the Government of Chile, 2009).

Likewise, there has been a simultaneous increase in the number of women entering the workforce and the number of women heads of household (National Women's Service, 2002), that is, belonging to single-parent families.

In Chile, in recent years, significant emphasis has been placed on children in state policies. In 2006, a comprehensive child protection system called Chile Crece Contigo was created, whose mission is to accompany, protect and comprehensively support all boys, girls and their families, addressing their needs and supporting development at each stage of life, early childhood (Chile Crece Contigo, 2009). One of its priorities is to provide quality care at the nursery level for all those boys and girls belonging to the poorest 40% of the population. This is how in recent years the coverage of nurseries and kindergartens has expanded in Chile by 240%, with plans to cover the entire demand in 2010 (National Board of Kindergartens, 2007).

This increase in preschool education coverage is focused mainly on the contexts of greatest psychosocial vulnerability, that is, the lowest-income sectors. One of



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the main objectives of this social movement is to provide facilities to women of low socioeconomic status who work outside the home.

It is in this context that it becomes relevant to know the particularities of the psychomotor development of the infants who belong to this population, considering at the same time that in a significant fraction of this social group the mother, in addition to working, is the head of the household, that is, she constitutes a single parent home. Therefore, it would be a contribution to understand the effects of the family configuration and the mother's work day on the psychomotor development of the child.

This information will allow us to better understand the initial conditions of the children who enter the nursery and, therefore, direct government efforts more effectively regarding prevention and intervention strategies in early childhood.

This is how this study aims to analyze whether there are differences in the psychomotor development of a sample of children from 8 to 24 months, of low socioeconomic level, who begin their preschool education in the nursery schools of Santiago de Chile, depending on whether their Family configuration is single-parent or two-parent and depending on whether the mother works part-time, full-time or does not work outside the home.

Background

Poverty and psychomotor development

Poverty places the infant in a position of greater vulnerability, since some of the factors associated with poverty would be linked to lower child psychomotor development (Halpern et al., 2002; Widmayer *et* al., 1990). Particularly in a sample of Chilean children Schonaut, Rojas and Kaempffer (2005) found that the psychomotor development deficit was three times greater in poor families. However, the relationship between poverty and low child psychomotor



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development is not causally linear, since there are studies that show adequate child development in this social group, these differences being explained mainly by the support networks that these families have (Egeland & Sroufe, 1981). Therefore, this topic is controversial, although research generally agrees on the fact that the first three years of a child's life constitute a critical period in human development (Bedregal & Pardo, 2004).

Family configuration, mother's work day and psychomotor development

Regarding the relationship between family configuration and psychomotor development, no significant differences have been found in the literature, only some trends. Torralba *et al.*(1999) found that at all ages of the children studied there was a difference in intellectual and motor performance in favor of children who had both parents, although this did not reach statistical significance. This last statement is also supported by a more recent study carried out by Soler Rivera, Figueroa, Sánchez and Sánchez (2007) in Mexico with families of low socioeconomic level, in which significant variations were found in the development coefficients determined by the socioeconomic level, and marital status, especially in the areas: social emotional, feeding, manual ability and lower degree of standing and praxis.

Likewise, numerous studies have shown that in single-parent families in contexts of poverty, a greater deterioration of interactions with children is observed, which would negatively affect child development (Bowlby, 1969; Coppola, Vaughn, Cassiba, & Constantini, 2006).

Regarding the relationship between maternal work hours and psychomotor development, certain studies indicate that there would be no significant differences between children whose mothers do not work outside the home and those who do (Torralba et al., 1999; Stith & Davis, 1984; Youngblut et



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al, 1993). In this regard, Torralba et al. (1999) conclude that it is not the quantity of hours but the quality of time that mothers share with their children that affects their development.

On the other hand, Rodríguez (2006) in an Argentine sample found a certain trend, which without being significant, showed better results on the sensorimotor intelligence scales in children of mothers with higher education and who did not work.

Schooling, mother's age and psychomotor development

Regarding the relationship between mother's education and psychomotor development, many studies show significant differences between different levels of education. In this regard, Schonaut, Rojas and Kaempffer (2005) in a sample of Chilean children found three times more deficits in psychomotor development in children of illiterate mothers. Lira (1994), for his part, also found in a Chilean sample that the fact that the father or mother had less than five years of schooling was significantly associated with the infant's psychomotor development being at risk level. For their part, Garibotti *et al.* (2013) in an Argentine sample found that the variable of low parental educational level was associated with lower psychomotor development than expected in three-year-old children.

Regarding the age of the mother, Lira (1994) suggests that the risk for psychomotor development is greater in children of mothers over 40 years of age and that this increases considerably if the infants are in their second year of life. On the other hand, Escobedo, Fletes, Velázquez, Flores, López and Thompson (1995) found no differences in psychomotor development between the children of adolescent mothers and those of adult mothers during the first year of life. Likewise, Soler, Rivera, Figueroa, Sánchez and Sánchez (2007) found no



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relationship between the differences in development coefficients with maternal education and age. Bernardi, Schwatzman, Canetti, Cerutti, Trenchi and Rosenberg (1992) suggest that in poverty contexts the variables associated with these may make the effect of the mother's age on psychomotor development less visible.

Method

Sample

The sample is made up of 199 children, aged 8 to 24 months, of low socioeconomic status who begin their public preschool education in 22 daycare centers in Santiago, Chile. The inclusion criteria were being between 0 and 2 years old and regularly attending the nursery. The exclusion criteria were presenting some physical and mental pathology. The mothers agreed to voluntarily participate in the study, after signing the informed consent.

Instruments

Psychomotor Development Evaluation Scale 0-24 months (EEDP) by Rodríguez, Arancibia and Undurraga (1976)

It consists of 75 items, five for each age. Considers 15 groups between 0 to 24 months; namely: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 18, 21 and 24. The scale measures the child's performance in certain situations that require a certain amount to be resolved. degree of psychomotor development. Four areas of psychomotor development are evaluated: motor, language, social and coordination, obtaining a development coefficient from the scores. Overall performance is expressed in a standard total score called *the developmental coefficient*.(CD). In this evaluation instrument the average is equal to 100 and the standard deviation is 15 points. Based on this, three defined ranges have been set as follows: CD = > 85: Normal; CD 84 - 70: Risk (between 1 and 2



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standard deviations below the average) and CD < 70: Delay (more than 2 standard deviations below the average). The EEDP has three tables for converting raw scores to standard scores for children aged 18 and 21 months. One according to the performance of children of medium-high socioeconomic level, another according to that of children of low level and another constituted by the average. The existence of these three scales derives from the fact that significant differences were found according to socioeconomic level in the aforementioned months.

This instrument was the first standardized in Chile for children from 0 to 24 months. The standardization and validation of the instrument was carried out with a sample of 600 children who were distributed in equal proportion according to sex and socioeconomic level for each of the 15 groups, in this way the sample included 40 children for each age group, resulting in 20 low socioeconomic level (10 men and 10 women) and 20 of medium-high socioeconomic level (10 men and 10 women).

Interview with the mother

The family and sociodemographic variables of the children and their families were extracted from the record of the interview with the parents carried out by the educator responsible for the institution when the child entered the nursery. This information was transferred to a file per child prepared for the purposes of this study.

Procedure

The data collected for this study are part of the first phase of initial evaluation of a program to promote secure attachment in Chilean nurseries. The procedure consisted of recruiting the sample, evaluating the children with the EEDP and



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subsequently collecting the sociodemographic data of each child and family, recorded by the educator in the initial interview with the mother.

Subsequently, a factorial ANOVA was carried out in which the standard psychomotor development scores of the children in the sample were compared, with respect to the education and age of their mothers. Then, a second factorial ANOVA was carried out in which the standard psychomotor development scores of the children in the sample were compared, with respect to the configuration of their families and their mothers' work hours, incorporating age and schooling as co-variables. of the mother. Compliance with the assumptions for the test was satisfactory. Analyzes were performed with SPSS 15.0 for Windows.

Results

Descriptive analysis of the sample

The children in the study at the time of the psychomotor development evaluation had an average of 18.96 months of age, with a standard deviation of 3.31 months, in an age range that fluctuated between 8 and 24 months. The mothers of the children had an average of 27.66 years of age, with a standard deviation of 7.14 years, in an age range that fluctuated between 16 and 48 years. Regarding psychomotor development, the average standard score of the children evaluated was 0.94 points, which is in the normal category, according to the Chilean standards of the instrument. The standard deviation was 0.18 points, in a range that fluctuated between 0.33 and 1.53 points. Regarding the sample distribution of psychomotor development categories, 67.6% of the children were in the normal category, 22.5% in the risk category and 6.4% in the delayed category.



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The sociodemographic characterization of the sample was as follows: 27% of the mothers have incomplete schooling, 33.8% completed secondary education and 18.6% at least began higher education. Regarding the family configuration of the families of the children evaluated, 32.4% had a single-parent configuration and 55.4% had a two-parent configuration. On the other hand, 30.4% of the mothers of the children evaluated do not have a job outside the home or have seasonal jobs, 16.7% of them work part-time, and 36.3% work full-time.

Factorial ANOVA results

No significant differences were found in the psychomotor development of children depending on whether the mother had incomplete schooling, complete schooling or higher education (F= 0.749; p= 0.477; α = 0.05) nor according to the mother's age (F= 0.980). ; p= 0.508; α = 0.05).

Despite the above, these variables were incorporated into the factorial ANOVA as covariates due to the importance they have received in the literature in terms of their relationship with child psychomotor development. The results of this test did not show significant differences in the psychomotor development of children between the different levels of the mother's work day, that is, between the children of mothers who work part-time, full-time or do not work outside the home (F=1.001; p=0.371; $\alpha=0.05$). Likewise, no significant differences were found in the psychomotor development of children depending on the family configuration, that is, whether they belonged to single-parent or two-parent families (F=0.136; p=0.714; $\alpha=0.05$). However, a significant interaction effect was found between both factors (F=3.561; p=0032; $\alpha=0.05$). This was specifically located between the full work day and the family configuration (F=5.709; p=0.019; $\alpha=0.05$).



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As shown in Figure 1, children whose mothers work full-time and come from a single-parent family score significantly lower in psychomotor development than children whose mothers also work full-time, but come from a two-parent family. Specifically in the sample of this study, there is a difference of 0.142 points between both groups, with children whose mothers work full-time and come from a single-parent family obtaining an average of 0.839 points, versus the average of 0.981 points obtained by children whose *mothers* work full-time and come from two-parent families.

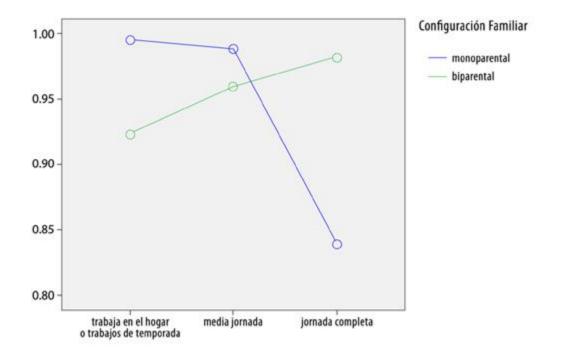


Gráfico 1. Efecto de interacción de la configuración familiar y la jornada laboral de la madre sobre el desarrollo psicomotor infantil

Fuente: elaboración propia

Discussion and Conclusions

This article evaluated how social and family variables impacted psychomotor development. Among the main findings of the present study is that single parenthood by itself does not explain the differences in psychomotor



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development, it would only be relevant when it interacts with the mother's full working day. In fact, there would be no differences in the psychomotor development of children who come from a single-parent family if the mothers work part-time or do not work outside the home. On the other hand and in contrast to what previous studies proposed (Schonaut *et al.*, 2005; Lira, 1994; Garibotti *et al.*,2013), in this study no relationship was found between the age of the mothers or their education with psychomotor development. This result could be interpreted according to what Bernardi *et al.* (1992) who suggest that these variables could have less effect in poverty contexts.

The results suggest that in two-parent families, children's psychomotor development is not affected by the fact that mothers work, either part-time or full-time, or do not work outside the home. This finding is relevant in a context of poverty, since maternal work can imply a very significant economic contribution to the family budget, contributing to the improvement of their quality of life and these results show that this would not have detrimental effects on child development for the population of low socioeconomic level that attends nursery school.

Likewise, it is important to highlight that although the simultaneous presence of single parenthood and the mother's full working day could constitute a risk factor in the psychomotor development of children, the same does not occur in cases where there is single parenthood but the mother works half a day. working day. Given these results, at the level of public policies it is necessary to consider the edges of this point, since a way should be sought so that cases of mothers who work full time can have more support from daycare centers in regards to stimulation. that the little ones receive. On the other hand, given that the results show that part-time work in families of mothers who are heads of household is



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not a problem, The support provided to them should continue to be encouraged and that allows them through daycare centers to maintain their insertion in the labor market. This is how the set of these findings contributes to the clarification of the relationship between family configuration and psychomotor development, which, given the importance of action and body movement in the first stages of child development (Piaget, 1969), is very relevant in view of contemporary transformations in the family and maternal work. The results show that there is still no evidence to support the hypothesis of a direct relationship between single parenthood and low psychomotor development, as was suggested in Soler's study. This is how the set of these findings contributes to the clarification of the relationship between family configuration and psychomotor development, which, given the importance of action and body movement in the first stages of child development (Piaget, 1969), is very relevant in view of contemporary transformations in the family and maternal work. The results show that there is still no evidence to support the hypothesis of a direct relationship between single parenthood and low psychomotor development, as was suggested in Soler's study. This is how the set of these findings contributes to the clarification of the relationship between family configuration and psychomotor development, which, given the importance of action and body movement in the first stages of child development (Piaget, 1969), is very relevant in view of contemporary transformations in the family and maternal work. The results show that there is still no evidence to support the hypothesis of a direct relationship between single parenthood and low psychomotor development, as was suggested in Soler's study. It is very relevant in view of the contemporary transformations in the family and maternal work. The results show that there is still no evidence to support the hypothesis



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of a direct relationship between single parenthood and low psychomotor development, as was suggested in Soler's study. It is very relevant in view of the contemporary transformations in the family and maternal work. The results show that there is still no evidence to support the hypothesis of a direct relationship between single parenthood and low psychomotor development, as was suggested in Soler's study. et al. (2007). Apparently, it is important to study this relationship considering that single parenthood could interact with other variables, such as the mother's working hours in this case.

In this sense, the present study contributes to the understanding of the joint influence of these two variables on children's psychomotor development, which had not been studied in the Chilean context, a topic that is especially relevant in the current psychosocial context. Chilean social policy is aimed at promoting greater entry of women into the world of work and based on these results it is possible to provide elements to take into account in the design of specific early childhood intervention strategies, aimed at the groups that are most vulnerable., such as children from single-parent families whose mothers work full time who belong to a low socioeconomic level and who attend day care.

On the other hand, guiding the study of the relationship between single parenthood and child psychomotor development in interaction with other variables opens up other varied alternatives to intervene in these risk contexts, to the extent that single parenthood does not necessarily have negative consequences on psychomotor development, but which is in the interaction with other variables, which can have it. This is how prevention and intervention policies can see their field of action increase, as well as detect at-risk populations with much greater precision, and therefore obtain better results.



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The results of this research invite us to reflect on what Torralba et al. mentioned previously. (1999) on the importance of the quality of mother-child interactions, on the *quantity*, at least in the case of two-parent families, which do not present significant differences for children's motor development in relation to maternal work, even when it is full-time. It is possible to hypothesize that in the case of low-SES single-parent families where the mother works full time (generally in low-skilled jobs), the mother's absence and her fatigue could be affecting the quality of the mother-child bond, particularly maternal sensitivity to the child's needs. This variable has been presented in previous studies in the case of adopted children as a predictor variable in the psychomotor development index (Van Londe, Juffer, & Van IJzendoorn, 2007). This could be what could explain the differences in children's psychomotor development in those cases. That is, the incorporation of this variable would contribute to understanding the reason why maternal work hours do not in themselves explain the low rates of psychomotor development, becoming a relevant variable only when the conditions do not exist—in this case the presence of another that complements the care of the child and household chores, a role that the father seems to be fulfilling in two-parent families—that safeguards the quality of the mother-child bond. The case of the coexistence of single parenthood and the mother's full working day in low-SES Chilean families would be one of those cases. becoming a relevant variable only when the conditions do not exist—in this case the presence of another who complements the care of the child and household chores, a role that the father would seem to be fulfilling in two-parent families—that safeguard the quality of the mother bond. -son. The case of the coexistence of single parenthood and the mother's full working day in low-SES Chilean families would be one of those cases. becoming a relevant variable only



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In relation to the above, considering possibilities of intervening in this risk group, keeping in mind that this population is increasing, work in day care centers with workshops to promote sensitivity for primary caregivers should be considered, which could support mothers in this task, favoring the psychomotor development of the children who attend it.

The findings suggest that the presence of the father would be a protective factor for the psychomotor development of children, in families in a context of poverty, where the mother works full time. The presence of her being a fundamental support in these cases, possibly the presence of another primary caregiver in families where the mother also works full time, allows to distribute the burden of the demands of the home and the care of the child. In this way it is possible to have more active interaction with the children and, as mentioned above, it favors the *quality* of the bond.

The results also invite new questions regarding the effect of preschool education on children's psychomotor development. In this regard, it would be interesting to study the way in which the interaction between family configuration, maternal work hours and psychomotor development behaves in the population of Chilean children of low SES who do not attend day care. The findings of this study could be understood more deeply if the role of preschool education in children's psychomotor development were clarified, both by introducing new



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caregiver figures for children, and by the effects of their interventions on the quality of the mother-child bond.

Finally, it is important to point out that these results must be interpreted with caution, to the extent that this sample belongs to a population that has particular characteristics, namely, the children belong to a low socioeconomic level and attend day care, which does not allow a generalization to the general Chilean population.

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