

English Summary

Language/Cognitive and Social/Self-Care Development of Preschool Children Under the Care of Social Services

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Children under the protection of social services do not have the opportunities provided in a family environment. For instance, in institutions, the physical conditions are limited, the caregivers are not stable, and the interactions with caregivers are emotionally inadequate (van IJzendoorn et al., 2011). Additionally, there are high number of children in each care group (9-16 children), and the number of caregivers per group is limited. Therefore, children in institutions have developmental problems in several developmental domains. In the current study, the development of language/cognitive and social-self-care skills were examined.

Since the family climate is the optimal condition for children's development, the development of institutionalized children improves when they are adopted or placed into foster care. For instance, in Bucharest Early Intervention Project, children in institutions and foster care were followed longitudinally, and the results showed that children in foster care performed better in cognitive tasks compared to children in institutions (Nelson et al., 2007). In the literature, institutionalized children are compared mainly with adopted children and children in foster care (i.e., Smyke et al., 2012). However, there are different care types in different countries. In Turkey, there are four care types: institutions, care villages, group homes, and foster care. Beginning in 2017, replacing institution-based care with home-based care has been targeted (Ministry of Family and Social Policies, 2017). Instead of institutions, care villages and group homes were promoted. In these care types, the number of children per group, and the number of caregivers in each group are lower than institutions. Therefore, children have more opportunities to experience one-to-one interactions with their caregivers. In the current study,

the development of children staying in these four care types (institutions, care villages, group homes, and foster care) and never-institutionalized children of low socioeconomic status (SES) families were compared. Never-institutionalized children from low-SES families were included since their family background resembled the family background of children under the care of social services.

Children might share the same environmental conditions, yet, to what extent the environmental conditions would influence children's development is subject to individual differences (Collins et al., 2000). There are various models explaining the interactions of children's characteristics with environmental conditions in predicting developmental outcomes. According to the diathesis-stress model, specific characteristics of individuals make them more susceptible to negative environmental conditions (Zuckerman, 1999). On the other hand, vantage sensitivity model argues that certain characteristics of individuals make them benefit more from positive environments (Pluess & Belsky, 2013). Additionally, the differential-susceptibility model argues that children with specific temperamental or genetic characteristics are more susceptible to environmental conditions (Pluess & Belsky, 2010). That is, they benefit more from advantageous environments, whereas they are at higher risk in the disadvantageous conditions. Thus, although children live in the same care types and experience the same environmental conditions, the impact of these environmental conditions might be subject to individual differences.

Consequently, the first aim of the current study was to examine the developmental difference/delay of children (in terms of language/cognitive and social/self-care

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skills) residing in five different care types (institutions, care villages, group homes, foster care, and never-institutionalized children from low-SES families). The second aim of the study was to investigate the moderator role of children's temperamental characteristics (frustration and perceptual sensitivity) in the relationship between care types and children's developmental differences. It was hypothesized that:

1. The developmental differences of children would differ across five care types. Respectively, children living in institutions, care villages, group homes, foster care, and never-institutionalized children from low-SES families would have more developmental differences.
2. Within the scope of differential susceptibility theory, whether the association between care types and developmental differences would differ according to children's temperamental characteristics would be examined. The directions of the associations would be exploratory.

Method

Participants

Participants of the study were 357 children under the care of social services (institution, care village, children's home, and foster care) and never-institutionalized children from low-SES families. The age range of children was 23-62 months. 57.8% of the children were boys ($N = 204$). There was a significant difference among the care types in terms of age ($F(348, 4) = 7.60, p < .001$), and gender ($F(348, 4) = 4.80, p < .01$). Children living in care villages were older than children in institutions, foster care, and never-institutionalized children. In terms of gender, the percentage of boys was higher in institutions as compared to care villages, foster care, and never-institutionalized group. Therefore, age and gender were controlled in the analyses.

Materials

The development of children. Children's development was assessed via Ankara Developmental Screening Inventory (ADSI; Savaşır et al., 1995). The inventory is used to evaluate children's development in terms of language/cognitive, fine motor, gross motor, and social skills/self-care. The scale consists of 154 items, and parents respond to the items as "yes/no/I don't know". In the current study, the profiles of children were drawn based on their scores considering the Turkish norms, and their developmental differences were determined based on how much they differed from the Turkish norm. The difference scores ranged between 0-3, and higher scores indicated higher levels of developmental difference/de-

lay. In this study, only the results of language/cognitive and social/self-care skills were reported.

Children's temperament. Children's temperament was evaluated via two scales in terms of frustration and perceptual sensitivity. Early Childhood Behavior Questionnaire (Gartstein & Rothbart, 2006) was used for 24-to 36-month-old children. The internal consistency was .80 for frustration and .82 for perceptual sensitivity. Children's Behavior Questionnaire (Rothbart et al., 2001) was used for 37-60-month-olds. The internal consistency was .79 for frustration and .81 for perceptual sensitivity.

Children's Background Information. The background information of children under the care of social services was taken from their institutions. In this regard, the duration of care in the previous and current care types, the risk factors that they are taken under care (i.e., the physical and psychological illness of parents, physical/emotional/sexual abuse), and the duration of total care in the social services were taken.

Procedure

The ethical approval of the study was taken from the ethical committee at Middle East Technical University, and the permission for data collection was taken from the Ministry of Family and Social Services. Then, data were collected from institutions, care villages, group homes, and foster care families in different cities. Never-institutionalized children of low-SES families were reached from Ankara. ADSI and temperament scales were completed by mothers/caregivers.

Results

The Comparison of Care Types in terms of Children's Developmental Difference

One-way ANCOVA results for language/cognitive skills indicated that there was a significant difference among the care types ($F(4, 346) = 9.64, p < .001$). Children in institutions had more developmental difference compared to children from foster care ($p < .01$) and never-institutionalized children ($p < .001$); and children in care villages ($p = .001$) and group homes ($p = .014$) had more difference compared to never-institutionalized children.

In terms of social /self-care skills, there was a significant difference among care types ($F(4, 346) = 7.75, p < .001$). Children in institutions, care villages, and group homes had more differences compared to children in foster care ($p < .001, p = .058, p = .009$, respectively) and never-institutionalized children ($p < .001, p = .06, p = .008$, respectively).

The Moderator Role of Temperament Predicting the Effects of Care Types on Children's Developmental Differences

To test the moderator role of temperament in the association between care types and developmental difference scores, hierarchical regression analyses were conducted. In the first step, the age and gender of the children; in the second step, children's frustration and perceptual sensitivity; in the third step, dummy variables of care types; and in the last step, care type and temperament interactions were entered. While creating dummy variables for the care types, the institutionalized group was taken as the reference group. For the results, the analyses testing the moderating role of frustration were reported. When there was a different finding, analyses testing the moderator role of perceptual sensitivity were also reported. Detailed results of regression analyses are given in Table 3.

In the regression analysis for language/cognitive developmental difference and testing the moderator role of frustration, 27% of the total variance was explained ($R^2 = .27$, $F(12, 337) = 11.87$, $p < .001$). Accordingly, high perceptual sensitivity ($\beta = -.44$, $p \leq .001$); as compared to residing in institutions, residing in care villages ($\beta = -.12$, $p \leq .05$), children's homes ($\beta = -.12$, $p \leq .05$), and low-SES families ($\beta = -.24$, $p \leq .001$) were associated with lower levels of developmental differences in language/cognitive development.

Furthermore, in the analysis testing the moderator role of frustration, it was reported that frustration had a regulatory role in the relationship between care village and language/cognitive developmental difference ($\beta = -.11$, $p < .05$). Simple slope analysis (Dawson, 2014) showed that children with high frustration had less developmental difference when living in care villages as compared to institutions ($t = -2.41$, $p = 0.02$); whereas, children with low frustration showed no difference according to the types of care ($t = 1.16$, $p = 0.25$). (see Figure 1)

Analyses testing the moderator role of perceptual sensitivity in the relation between care types and language/cognitive developmental difference, there was an interaction of perceptual sensitivity and living in low-SES family ($\beta = .14$, $p = .002$). Accordingly (see Figure 2), among children with high perceptual sensitivity, children from low-SES families showed a higher developmental difference in their language/cognitive development compared to their peers living in the institutions ($t = -2.41$, $p \leq .001$). There was no significant difference between types of care for low perceptual sensitivity group ($t = -1.10$, $p = .27$).

In the regression analysis testing the moderator role of frustration for care types and social skills/self-

care association, 23% of the total variance was explained ($R^2 = .23$, $F(12, 337) = 9.69$, $p < .001$). Accordingly, children's age ($\beta = -.20$, $p < .001$), perceptual sensitivity ($\beta = -.32$, $p < .001$) and living in a low-SES family instead of living in institutions ($\beta = -.20$, $p < .01$) were negatively associated with the difference of social skill/self-care development. In the analysis testing the moderator role of perceptual sensitivity, staying in a foster family was negatively related to children's developmental difference in this area ($\beta = -.15$, $p < .05$).

It was revealed that frustration had a moderating role in the association between foster care and social skill/self-care developmental difference ($\beta = -.09$, $p = .095$) marginally. According to simple slope analyses (see Figure 3), among the children with high frustration, those living in foster families showed a less developmental difference in the social skills/ self-care ($t = -2.37$, $p = .02$). No significant difference was observed between the two types of care in children with low frustration group ($t = .54$, $p = .59$).

In addition, perceptual sensitivity had a moderating role in the relationship between living with a low-SES family and social skills/self-care developmental difference. According to simple slope analyses, among the children with low perceptual sensitivity, children who stayed in institutions had a higher developmental difference in social skills/self-care compared to never-institutionalized children ($t = -2.45$, $p = .02$). In children with high perceptual sensitivity, there was no significant difference among the care types ($t = .72$, $p = .48$, see Figure 4).

Additional Analyses

The development of children under care might be different according to the duration of care in the current care type and previous care types, the total number of institutions they have stayed in, and the risk factors that caused them to be taken under care. Thus, additional regression analyses controlling these variables were conducted for children living under state care. The only additional finding was that children who changed more care facilities showed more social skill/self-care developmental difference ($\beta = .19$, $p = .01$).

Discussion

In the current study, it was aimed to examine how children living in different care types (institutions, care villages, group homes, foster care, and never-institutionalized children from low SES families) differ in language/cognitive and social /self-care skills development. Also, it was tested whether the child's temperament moderated the relationship between care types and de-

velopmental outcomes.

It was found that children in institution-based care types (institutions, care villages, group homes) had a greater risk for developmental differences both in cognitive and social domains compared to those in family-based care. These findings are consistent with previous studies (i.e., Bos et al., 2009; Erol et al., 2010). In institutions, stimulating activities that are important for the development of children are inadequate. This constitutes a risk factor, especially for children's cognitive development (Tierney & Nelson, 2009). Also, stable and one-to-one interaction with caregivers is crucial for children to obtain self-care skills (Betz, 2000). Unfortunately, children in institution-based care types have limited opportunities to experience it due to the high number of children in groups and frequent changes of caregivers (van IJzendoorn et al., 2011). Hence, both language/cognitive and social/self-care development of children in institutional care has been more likely to be interrupted.

For the role of temperament, the children's perceptual sensitivity was negatively related to developmental difference scores in both language/cognitive and social/self-care domains. This indicates that higher perceptual sensitivity is a protective factor for the children regardless of the care type. It may be possible to interpret such a finding through perceptually sensitive children's ability in processing the cues in their environments (Jagiłowicz et al., 2011).

Also, children's frustration moderated the association between care village and the developmental difference in language/cognitive domain. That is, among highly frustrated children, children in care villages had lower difference scores than those in the institutions. However, there was no difference between the care types among peers with high frustration. It is thought that care villages are a better care model than institutions in terms of caregiver-child ratios and physical and social facilities (Ministry of Family and Social Policies, 2013; Söğütü, 2015). For this reason, this finding may be seen as a support for vantage sensitivity hypothesis (Pluess and Belsky, 2013).

For differences in language/cognitive development, perceptual sensitivity had a moderator role, as well. Perceptually sensitive children in institutions had lower difference scores than never-institutionalized children. The differences in home environments between the two care types may explain this surprising finding. It has been reported that home environments in low-SES families usually seem unstructured and chaotic. Also, they tend to be too stimulating for children because of the crowd and noise in the home context (e.g., Martin et al., 2012). It becomes challenging to differentiate positive stimuli from negative ones in such an environment.

Therefore, the development of children may be affected in negative ways (Evans et al., 1991). On the contrary, there is a more regular life and enriched physical environment in institutions (McCall, 2013). This may be especially beneficial for perceptually sensitive children who are sensitive to environmental effects (Gartstein & Rothbart, 2003).

While predicting developmental differences in social development/self-care skills, children's frustration interacted with foster care. That is, highly frustrated children in foster care had lower difference scores than their highly frustrated peers in the institution. This finding also supports vantage sensitivity hypothesis (Pluess & Belsky, 2013). Also, the interaction between low-SES family and perceptual sensitivity was significant. That is, among children with low perceptual sensitivity, never-institutionalized children had lower differences than those in institutions in terms of social/self-care skills. ADSI assesses children's social and self-care skills in domains such as taking responsibility, doing age-appropriate housework, and toilet training. The frequency of one-to-one interaction with caregivers and the quality of those interactions seem essential for healthy development in such domains. Hence, it is expected, especially for perceptually low sensitive children in institutions, to show higher differences in this domain.

Strengths and Difficulties of the Study

The study is not without limitations. Firstly, the assessments were based on mothers' or caregivers' reports, thus, a shared method variance problem might exist. Especially for mothers/caregivers who did not have the opportunity to observe children, their reports might not represent the actual performances of children. Additionally, although the current study indicated that care types differ in their effects, it is not possible to find out which characteristics of care types lead to differences in child outcomes. Finally, due to the cross-sectional design of the study, it is hard to determine the directions of the associations.

The study has some strengths. The current study included all types of care in Turkey, and the data were collected from several cities. Inclusion of all care types increased the generalizability of the findings. Additionally, the results indicated that children are affected by the environmental conditions in different ways. Therefore, these findings might be used in the development of future intervention studies and social policies.