

Impact of the COVID-19 Quarantine on Young Children's Family-Based Daily Activities in Greece

Dimitra Panagiotopoulou¹ & Kalliroi Papadopoulou¹

¹ Department of Early Childhood Education, School of Education, National and Kapodistrian University of Athens, Athens, Greece

Correspondence: Kalliroi Papadopoulou, Department of Early Childhood Education, School of Education, National and Kapodistrian University of Athens, 13A Navarinou st., Athens 10680, Greece. Tel: 30-210-368-9314. ORCID ID: <https://orcid.org/0000-0003-2969-108X>

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Abstract

This study reports on parental perceptions of changes and continuities in young children's home-based daily activities during the initial COVID-19 quarantine in Greece. Daily activities present significant contexts for children's learning and development and their continuity in periods of crisis is important for children's psychological well-being. Existing research worldwide, underscores the changes occurring in families' daily lives because of the pandemic-imposed restrictions, mostly focusing on their negative impact on family routines and functioning. On the other hand, continuities in children's everyday activities during the quarantine have been less studied. 116 mothers and fathers, forming a convenience sample, reported on their children's as well as their own engagement in daily activities with them, before and during the quarantine, using the CDA-PB scale. Results revealed changes in accordance with other research findings on this topic but also continuities in Greek families' daily activities, which relate to parental values and already established family routines.

Keywords: COVID-19, preschool children, daily activities, quarantine

1. Introduction

In January 2020 the World Health Organization declared a Public Health Emergency of International Concern regarding the COVID-19 virus outbreak, which soon afterwards evolved to a pandemic level, resulting to lockdowns around the world. In Greece, on March 10th all schools were closed and 10 days later a general strict lockdown was imposed lasting for 10 weeks continuously ("Ekathimerini Lockdown starts 6 a.m. Monday", 2020) during which people could only leave their homes for very specific reasons and after permission granted through personalized SMS service.

The conditions of the lockdown and the resulting quarantines have raised concerns for young children's psychological wellbeing, leading to numerous studies worldwide. The majority of these studies have focused on the implications resulting from school closures, social distancing and parents' working from home while simultaneously caring for children (Ares et al., 2021; Lee et al., 2021; Toran et al., 2021). Disruptions in family routines have been associated with the experience of worry, fear and uncertainty in both parents and children as well as with heightened distress, anxiety, depression and emotional fatigue in parents. These add potential risk for parenting difficulties and the quality of parent-child relations and interactions, especially for families with lower socioeconomic background and pre-existing problems in family functioning (Ares et al., 2021; Brooks et al., 2020; Di Giorgio et al., 2020; Lee et al., 2021; Russell et al., 2020; Spinelli et al., 2020; Uzun et al., 2021; Wang et al., 2020). Such effects top up the consequences that school closure, home confinement and social distancing per se have on the quality of life and the psychological well-being of adolescents, school aged and preschool children (Di Giorgio et al., 2020; Jiao et al., 2020; Orgilés et al., 2020; Ravens-Sieberer et al., 2021).

On the other hand, studies with a mere focus on children's everyday activities during the quarantine period have been rather scarce (Toran et al., 2021), despite the fact that such activities normally shape young children's daily lives and the recognition that continuation of daily habits in periods of crisis serves as a protective factor for children's psychological well-being (Russell et al., 2020; Vukovic et al., 2021). When conducted, most of the studies on this topic have focused on the negative implications of the detected changes, such as for example the decrease in children's movement and physical activity and the simultaneous significant increase in the amount of

time spent by children in screen-based activities (Cachón-Zagalaz et al., 2021; Moore et al., 2020; Schmidt et al., 2020). Similarly, many studies have reported increases in parental engagement in all childcare activities (from self-care to play). These have mainly been associated with more strain to parents, but there are findings also pointing to positive effects such as the increase of quality time parents spent with their children (Ares et al., 2021; Lee et al., 2021; Toran et al., 2021).

Apart from understanding the emotional impact on families, the importance of studying quarantine effects on family-based daily activities is supported by the viewpoint of sociocultural and contextual theories that such activities represent culturally meaningful contexts which afford children with experiences necessary for learning and development, especially through interactions with significant others, direct (when others actually participate) or indirect (through the types of children's activities they encourage) (Harkness & Super, 2002; Harkness et al., 2011; Parmar et al., 2008; Rogoff, 1990, 2003; Rogoff et al., 2007; Rogoff et al., 1998; Tudge et al., 2006; Vygotsky, 1978, 1934/1987). Previous research has demonstrated that different factors contribute to the formulation of the context of everyday activities in children's lives. Among these, parental physical presence or proximity (directly linked with working hours and availability), the type of the activity (e.g. self-care, household chores, play, learning or socialization) and the estimated necessity of provision of help or assistance, have been pointed out as important (Archbell et al., 2020; Gracia, 2018). Additionally, parental beliefs about the significance of everyday activities for child development have been identified as central in mediating the types of activities parents encourage and participate, thus influencing the nature of the activities children themselves engage in and the time spent in them (Haight et al., 1999; Harkness & Super, 2006; Harkness et al., 2011; Parmar et al., 2004; Petrogiannis et al., 2013; Rogoff et al., 1993; Tudge et al., 1999, 2006; Tulviste et al., 2007). Tudge et al. (2006) for example, showed that children with parents, who value education, were more likely to engage in activities assumed to prepare children for schooling, such as play with academic objects and conversations with adults. Similarly, parental beliefs about the functions of play have been associated with the type, frequency and intensity of children's play (Gaskins et al., 2007) as well as with parental engagement in children's play activities (Haight et al., 1999; Parmar et al., 2004).

Traditionally, research has mostly focused on mother-child pairs and mothers have been regarded as more reliable informants about children's activities. During the last two decades however, research has placed interest in fathers' increasing involvement in children's daily lives (Lamb, 2000; Lewis & Lamb, 2003; Yeung et al., 2001) and has highlighted its significance for positive child outcomes (Cabrera & Tamis-LeMonda, 2013; Mangiavacchi et al., 2020; Tamis-Le Monda et al., 2004). Existing research has also shown differences between mother-child and father-child interactions, which relate to the time they allocate to their engagement with the children (Craig & Mullan, 2011), the type of activities they participate in (Craig, 2006; Lewis & Lamb, 2003) and the role they undertake while interacting with their children, differences that have also been depicted during the COVID-19 quarantines (Mangiavacchi et al., 2020; Russell et al., 2020).

It is thus of interest to examine home-based family activities during the COVID-19 imposed quarantine, as contexts of children's engagement and interaction with parents in this unique situation requiring significant adjustments in families' daily lives.

In this vein, the present study aimed to explore the impact of the quarantine on children's family-based everyday activities and parental involvement in them, as depicted in the views of Greek mothers and fathers. It also attempted to look into different parameters which may mediate changes and continuities in families' daily lives during the quarantine. Although observational measures are essential for investigations on this topic, parental reports provide a viable alternative, as parents are considered a valuable source of information regarding direct and indirect influences on children's daily lives (Harkness et al., 2011). More specifically, the present study set out to:

- 1) Explore changes and continuities in parental reports for children's solo and for parent-child joint daily activities during the quarantine period, compared with before the restrictions.
- 2) Examine the impact of parental perceptions of the developmental significance of daily activities on children's solo and parent-child joint participation in these activities.
- 3) Look into differences between mothers and fathers regarding (a) the perceived developmental significance of daily activities and (b) their participation in joint activities with the children before and during the quarantine.

2. Method

2.1 Participants

Participants were 66 (out of 88 initially contacted) families with children attending kindergarten, or the first grade of primary school, forming a convenience sample. They originated from the city of Athens/Greece and a provincial

town in East Peloponnese/Greece with a population of 40 thousand. Twenty-two families were excluded either because they failed to return the required consent form or a valid questionnaire. Both parents in 50 out of the 66 families, provided full consent and returned valid questionnaires, whereas for the remaining 16 only one parent responded. Thus, our final sample consisted of 116 parents and 66 children.

Families were initially approached in March 2020 via four pediatricians, known to the first author (two in Athens and two in the provincial city), who handed to their clients an invitational letter describing the study. Parents who agreed to participate were afterwards contacted for further explanations. Inclusion criteria involved a) both parents living together with their child, b) natively speaking the Greek language and c) having at least one child attending either kindergarten or the first grade of primary school, without significant health problems or disabilities.

2.2 Materials and Procedure

Self-report data were collected by a questionnaire based on the CDA-PB Scale, an instrument developed in Greece by Petrogiannis et al. (2013) which provides parental assessment of the developmental significance of family-based, preschool children's daily activities. The CDA-PB scale comprises five categories of activities, namely 'Household and Self-Care', 'Recurrent outings' (out of home social activities), 'Pre-academic activities', 'Play (indoors)' and 'Home entertainment activities' (recreational screen based activities). As indicated by the research of Petrogiannis et al. (2013), parental perceptions of the developmental significance of daily activities, strongly influence both the occurrence of these activities in children's daily lives as well as parental participation in them. Thus, the questionnaire utilised in the present study was composed of three identical lists of the activities described above, assessing parental perceptions of (a) the frequency of occurrence of the described children's activities (referred as solo children's activities or solo) (b) the frequency of parental participation in the described activities (referred as joint parent-child activities or joint) and (c) the perceived developmental significance of these activities. The first two measures used a 5-point response scale ranging from 'never' (= 0) to 'daily' (= 4) and were completed by parents for both the period before as well as during the quarantine. The third measure also used a 5-point scale ranging from negligible (= 0) to extremely important (= 4). Additionally, the questionnaire included a gross estimation of the effect that parents perceived quarantine had on their joint activities with their children (reported on a 3-point scale: positive, neutral, negative). Finally, parents were asked about the time (in hours) they spent daily in joint activities with their children, before and during the quarantine.

The questionnaire was prepared in electronic form, using a PDF platform and was e-mailed to the participants with the instruction to complete it independently and return it to the researchers within one week. Questionnaires were collected between April 20th and May 10th 2020.

2.3 Ethics

The present study was approved by the Department of Early Childhood Education, National and Kapodistrian University of Athens (NKUA), Greece, as part of the undergraduate dissertation of the first author. Parents were fully informed about the purpose of the study, the nature of the questions and the procedure and they provided their written consent. Questionnaires were completed anonymously and were assigned codes for the statistical analysis. Any information allowing identification of participants was deleted once the questionnaires were returned.

2.4 Data analyses

Data were coded and analyzed using the SigmaStat Software, version 4.0, (Copyright © 2016 Systat Software, Inc) and are presented as mean values (M) with standard deviation (SD), or as mean values (M) with standard error of means (SEM). The unpaired t-test was used to compare quantitative variables among groups and the paired t-test to compare quantitative measurements of the same individuals, before and during quarantine, with Yates correction, and Shapiro-Wilk test of normality. In the absence of the normality criterion, the Mann-Whitney Rank Sum test was used for unpaired data and the Wilcoxon Sign Rank test for paired observations.

The χ^2 test of independent samples was used to compare qualitative data and the paired McNemars χ^2 test with Yates correction was used for repeated qualitative measurements of the same individuals, before and during quarantine. Percentage differences of qualitative characteristics with marginal statistical significance and low power of the test (power ≤ 0.80) were additionally analyzed, using the z-test, with 95% Confidence Interval (95% CI) of the proportion, in order to avoid type-II statistical errors.

The existence of associations between the various study variables was investigated using the Pearson product moment correlation coefficient (r), or, in the absence of normality, the Spearman rank order correlation coefficient. One way analysis of variance (ANOVA) was used for multiple groups' comparisons, testing for normality by means of the Shapiro-Wilk normality test and the equal variance Brown-Forsythe test. In case of non-normally distributed variables, Kruskal-Wallis analysis of variance on ranks was used. Upon identifying significant

differences, we proceeded with the post-hoc Tukey test (All Pairwise Multiple comparison) to determine exactly which groups were significantly different as well as the size of difference. For all measurements, the level of statistical significance was set to $p \leq .05$.

Cohen's (d) index was used to estimate the effect size for the comparison of measurements before vs during quarantine, utilizing the formula $d = [M_{quarantine} - M_{before}] / SD_{differences}$ (Sheskin, 2000). The 95% confidence intervals of d (95% CI_d) were calculated with the formula $CI_d = d \pm t * SE_d$ (where t is the 95% critical value of t -distribution) and $SE_d = \sqrt{[(1 / N) + (d^2 / 2N)]}$ (Hedge & Olkin., 2014).

3. Results

3.1 Demographic Data

Sixty-three mothers (54%) and 53 fathers (46%) formed the sample of 116 parents ($p = .224$). Fifty of the participating parents came from the city of Athens (43%) and 66 from the provincial town (57%, $p = .13$). Comparison of these two groups in all study variables did not show statistically significant differences as a function of residency. This fact allowed us to treat parents living in either place uniformly.

The mean age of parents was 39.5 years ($SD = 4$). The majority of parents (66%) had higher educational qualifications while 34% held technical college or high school diplomas ($p < .001$). The percentage of parents that kept on working during the quarantine (69%), mostly from distance, was significantly higher in relation to the percentage of those who were forced to pause from their jobs (31%, $p < .001$). The imposed restrictions due to the quarantine resulted in a considerable increase of the time that parents could spend in joint activities with their children ($M_{hours\ before} = 3.1$, $SD = 2.8$, $M_{hours\ quarantine} = 5.8$, $SD = 4.2$, $p = .001$) which, for the vast majority of parents, was accompanied by a positive perception of the effect quarantine had on their participation in joint activities (positive: 75%, neutral or negative: 25%, $p < .001$).

The 66 children of the participating families (37 boys and 29 girls, $Z = .975$, $p = .329$) had a mean age of 5.5 ($SD = 0.9$) years (range 3.4 – 7.6 years old), with no significant difference between boys ($M = 5.6$, $SD = 0.8$) and girls ($M = 5.3$, $SD = 1.0$, $t(64) = 1.23$, $p = .222$). Most of the children were first or second born ($n = 58$, 86%). Families with two children were the majority ($n = 41$, 62%) in relation to those with one child ($n = 12$, 18%) or with more than two children ($n = 13$, 20%, $z = 5.0$, $p < .001$).

3.2 Children's Solo Activities and Parent-Child Joint Activities

Mean frequency scores were calculated for each one of the 30 items comprising the list of activities described in the questionnaire regarding children's solo as well as parent-child joint activities, for both the period before and during the quarantine. Next, items composing the same activity category (Petrogiannis et al., 2013) were selected and their mean frequency scores were averaged in order to produce a new mean frequency score for each category of activity. Tables 1 and 2 summarize the results for children's solo and parent-child joint activities respectively.

Table 1. Children's solo activities (N = 66) grouped in the five categories of the questionnaire.

Children's Solo Activities	Before	Quarantine	Paired t-test	Cohen's d (95% CI_d)		
	M (SEM)	M (SEM)	p	d	lower	upper
#1 Picks up his/her things	2.4 (0.10)	2.8 (0.10)	< .001	0.56	0.30	0.82
#2 Cleans up if s/he makes a mess	2.2 (0.10)	2.6 (0.10)	< .001	0.61	0.34	0.88
#3 Tidies up his/her room	1.9 (0.10)	2.3 (0.11)	< .001	0.66	0.39	0.93
#4 Makes up his/her bed	1.0 (0.10)	1.5 (0.15)	< .001	0.63	0.36	0.90
#5 Helps in tidying up the house	1.9 (0.10)	2.3 (0.10)	< .001	0.69	0.42	0.96
#6 Helps making the table	1.9 (0.13)	2.4 (0.14)	< .001	0.74	0.46	1.02
#7 Prepares something to eat	1.4 (0.13)	1.9 (0.15)	< .001	0.68	0.41	0.95
#8 Gets dressed alone	2.9 (0.12)	3.2 (0.10)	< .001	0.68	0.41	0.95
#9 Showers by him/herself	1.7 (0.17)	1.9 (0.17)	< .001	0.48	0.22	0.74
Household & self-care	1.9 (0.07)	2.3 (0.08)	< .001	0.94	0.65	1.23
#10 Watches TV	2.8 (0.12)	3.3 (0.11)	< .001	0.88	0.59	1.17
#11 Watches video or DVD	1.9 (0.12)	2.4 (0.14)	< .001	0.69	0.42	0.96

#12 Plays/uses the computer	1.3 (0.13)	1.9 (0.17)	< .001	0.83	0.55	1.11
Home entertainment	2.0 (0.08)	2.5 (0.09)	< .001	1.07	0.76	1.38
#13 Goes to the theatre / cinema with an adult	1.8 (0.11)	0.2 (0.07)	< .001	-1.4	-1.74	-1.06
#14 Goes for walks with an adult	2.9 (0.06)	2.3 (0.15)	< .001	-0.56	-0.82	-0.30
#15 Visits friends or relatives	2.5 (0.08)	0.7 (0.10)	< .001	-1.74	-2.13	-1.35
#16 Visits friends to play	2.3 (0.09)	0.5 (0.09)	< .001	-1.77	-2.16	-1.38
#17 Shopping with someone from the family	2.6 (0.07)	0.3 (0.07)	< .001	-2.38	-2.86	-1.90
#18 Plays with other children	3.3 (0.08)	1.5 (0.16)	< .001	-1.39	-1.73	-1.05
#21 Plays outside	3.0 (0.07)	1.6 (0.16)	< .001	-1.22	-1.54	-0.90
Recurrent outings	2.6 (0.04)	1.0 (0.07)	< .001	-2.15	-2.59	-1.71
#19 Plays with puzzle	2.1 (0.10)	2.4 (0.10)	< .001	0.45	0.19	0.71
#20 Plays with constructive toys	2.7 (0.12)	3.1 (0.12)	< .001	0.77	0.49	1.05
#23 Plays with toy cars, dolls or other toys	3.0 (0.09)	3.4 (0.08)	< .001	0.76	0.48	1.04
#24 Plays with board games	2.2 (0.10)	2.6 (0.10)	< .001	0.75	0.47	1.03
Indoors play	2.5 (0.08)	2.9 (0.07)	< .001	0.99	0.69	1.29
#22 Plays with educational toys	2.5 (0.09)	2.9 (0.10)	< .001	0.59	0.33	0.85
#25 Turns pages on books with pictures	2.9 (0.10)	3.0 (0.10)	.009	0.34	0.09	0.59
#26 Pretends to read at bedtime	2.6 (0.13)	2.8 (0.12)	.005	0.35	0.10	0.60
#27 Tries to write	3.1 (0.09)	3.3 (0.08)	.005	0.36	0.11	0.61
#28 Draws	3.2 (0.09)	3.3 (0.09)	.012	0.35	0.10	0.60
#29 Pretends to read at bedtime	2.0 (0.15)	2.1 (0.16)	NS (.09)	0.23	-0.02	0.48
#30 Sings	2.6 (0.13)	2.8 (0.13)	0.003	0.4	0.15	0.65
Pre-academic	2.7 (0.07)	2.9 (0.07)	< .001	0.6	0.34	0.86

All individual items comprising the five categories increased significantly during quarantine ($p < .001$), with the exception of #29 'pretends to read at bedtime', which remained unchanged, and the whole 'Recurrent outings' category which decreased significantly, as expected due to the imposed restrictions. The 'Pre-academic' and 'Play' activity categories showed the highest frequency both before and during the quarantine followed by 'Home entertainment' and 'Household & self-care'. The two latter categories presented the largest relative increase during the quarantine.

In order to evaluate the magnitude of the observed differences in children's solo activities, we compared the calculated differences using one way ANOVA on Ranks. Results showed that the change in the category of 'Pre-academic activities' was significantly lower in relation to the observed change in the three other activity categories ($H(3) = 26.342$, 'Pre-academic activities' vs 'Home entertainment' $q = 7.079$, $p < .001$, vs 'Play' $q = 4.222$, $p = .015$, vs 'Household & self-care' $q = 4.020$, $p = .023$) (Table 3). The differences between the latter three groups were not statistically significant ('Home entertainment' vs 'Household & self-care' $q = 3.059$, $p = .134$, 'Home entertainment' vs 'Play' $q = 2.857$, $p = .180$, 'Household & self-care' vs 'Play' $q = 0.202$, $p = .999$).

Regarding parent-child joint activities, we found significant differences in almost all of the recorded items (Table 2). Again the category of 'Recurrent Outings' presented significant reductions, because of the imposed restrictions.

Table 2. Parent-child joint activities ($N = 116$) grouped in the five categories of the questionnaire

Parent-child joint activities	Before	Quarantine	Paired t-test	Cohen's d (95% CI_d)		
	M (SEM)	M (SEM)	P	d	lower	upper
#1 Picking up his/her things together	2.8 (0.09)	2.9 (0.10)	.412	0.09	-0.09	0.27
#2 Cleaning up together if he/she makes a mess	2.8 (0.10)	3.0 (0.10)	.002	0.3	0.11	0.49
#3 Tidying up his/her room together	2.6 (0.11)	2.7 (0.10)	.264	0.1	-0.08	0.28
#4 Making up his/her bed together	2.4 (0.14)	2.4 (0.13)	.758	-0.03	-0.21	0.15
#5 Helping him/her in tidying up the house	2.5 (0.11)	2.8 (0.10)	< .001	0.47	0.28	0.66
#6 Helping him/her to make the table	2.0 (0.12)	2.5 (0.11)	< .001	0.52	0.32	0.72
#7 Helping to prepare something to eat	1.9 (0.11)	2.2 (0.12)	< .001	0.42	0.23	0.61
#8 Encouraging to get dressed alone	3.2 (0.09)	3.4 (0.08)	< .001	0.39	0.20	0.58
#9 Encouraging to have a shower	2.2 (0.13)	2.4 (0.13)	< .001	0.47	0.28	0.66
Household & self-care	2.5 (0.07)	2.7 (0.07)	< .001	0.48	0.29	0.67
#10 Watching TV together	2.3 (0.10)	2.7 (0.09)	< .001	0.53	0.33	0.73
#11 Watching video or DVD together	1.7 (0.09)	2.1 (0.10)	< .001	0.47	0.28	0.66
#12 Using the computer together	1.2 (0.10)	1.6 (0.11)	< .001	0.6	0.40	0.80
Home entertainment	1.7 (0.07)	2.1 (0.07)	< .001	0.7	0.49	0.91
#13 Going together to the theatre or cinema	1.7 (0.09)	0.2 (0.06)	< .001	-1.3	-1.55	-1.05
#14 Going together for walks	2.8 (0.07)	2.1 (0.13)	< .001	-0.39	-0.58	-0.20
#15 Visiting friends or relatives together	2.6 (0.06)	0.8 (0.10)	< .001	-1.53	-1.80	-1.26
#16 Visiting friends to play	2.3 (0.08)	0.8 (0.09)	< .001	-1.19	-1.43	-0.95
#17 Going together shopping	2.5 (0.08)	0.6 (0.09)	< .001	-1.5	-1.77	-1.23
#18 Playing with him/her child & other children	1.8 (0.09)	1.3 (0.11)	< .001	-0.47	-0.66	-0.28
#21 Playing together outside	2.6 (0.07)	1.8 (0.13)	< .001	-0.6	-0.80	-0.40
Recurrent Outings	2.3 (0.04)	1.1 (0.06)	< .001	-1.49	-1.76	-1.22
#19 Playing together with puzzles	1.9 (0.08)	2.2 (0.08)	< .001	0.36	0.17	0.55
#20 Playing together with constructive toys	1.9 (0.09)	2.3 (0.10)	< .001	0.46	0.27	0.65
#23 Playing together with cars/dolls/other toys	2.0 (0.09)	2.3 (0.10)	< .001	0.48	0.29	0.67
#24 Playing together with board games	1.9 (0.08)	2.4 (0.09)	< .001	0.66	0.46	0.86
Indoor play	1.9 (0.06)	2.3 (0.06)	< .001	0.66	0.46	0.86
#22 Playing together with educational toys	2.2 (0.09)	2.6 (0.08)	< .001	0.51	0.31	0.71
#25 Browsing together books with pictures	2.5 (0.09)	2.8 (0.09)	< .001	0.39	0.20	0.58
#26 Reading books together	2.7 (0.09)	3.0 (0.09)	< .001	0.5	0.31	0.69
#27 Doing writing together	2.9 (0.09)	3.1 (0.08)	.001	0.31	0.12	0.50
#28 Drawing together	2.2 (0.09)	2.5 (0.10)	< .001	0.45	0.26	0.64
#29 Reading him/her child tales at bedtime	2.4 (0.11)	2.5 (0.11)	.045	0.21	0.02	0.40
#30 Singing together	2.0 (0.11)	2.2 (0.11)	< .001	0.36	0.17	0.55
Pre-academic	2.4 (0.06)	2.7 (0.06)	< .001	0.64	0.44	0.84

The categories which presented higher level of parental participation during the quarantine were the 'Household & self-care' and 'Pre-academic' activities, followed by 'Play' and 'Home entertainment', with a similar pattern for the period before. The most pronounced increase was noted in the category of 'Home entertainment' followed by

‘Play’, ‘Pre-academic’ and ‘Household & self-care activities’. These differences were not statistically significant, with only a borderline significance between ‘Home entertainment’ and ‘Household & self-care’ activities ($H(3) = 6.831, p = .077$) (Table 3).

Table 3. Summary statistics for children’s solo and parent-child joint activities before and during the quarantine.

Solo children activities <i>N</i> = 66	Before <i>M (SEM)</i>	Quarantine <i>M (SEM)</i>	Absolute (Cohen’s <i>d</i>)	Difference	Paired t-test	ANOVA on Ranks
Recurrent Outings	2.67 (0.04)	1.04 (0.07)	-1.63 (-2.15)		< .001	
Home entertainment	2.03 (0.08)	2.57 (0.09)	0.54 (1.07)		< .001	< .001
Household & self-care	1.94 (0.07)	2.34 (0.08)	0.40 (0.94)		< .001	.023
Play	2.51 (0.08)	2.90 (0.07)	0.39 (0.99)		< .001	.015
Pre-academic	2.72 (0.07)	2.91 (0.07)	0.19 (0.60)		< .001	†
Joint parent-child activities <i>N</i> = 116	Before <i>M (SEM)</i>	Quarantine <i>M (SEM)</i>	Absolute (Cohen’s <i>d</i>)	Difference	Paired t-test	ANOVA on Ranks
Recurrent Outings	2.34 (0.04)	1.09 (0.06)	-1.25 (-1.49)		< .001	
Home entertainment	1.75 (0.07)	2.13 (0.07)	0.38 (0.70)		< .001	.077
Play	1.96 (0.06)	2.31 (0.06)	0.35 (0.66)		< .001	.099
Pre-academic	2.43 (0.06)	2.68 (0.06)	0.25 (0.64)		< .001	.944
Household & self-care	2.50 (0.07)	2.71 (0.07)	0.21 (0.48)		< .001	‡

(†) Post-hoc comparisons of Pre-academic frequency differences vs the differences of the three other indoors activities. Recurrent outings were not included in the ANOVA.

‡ ANOVA post-hoc *p* values between differences of the Household & self-care joint activities and the differences of the rest three groups of indoors joint activities.

Children’s age was positively and significantly correlated with the frequency of a) solo and joint ‘Household and self-care’ activities before the quarantine ($r = .438, p < .001$ and $r = .251, p = .006$, respectively) and only the solo during the quarantine ($r = .373, p < .001$) and b) the joint ‘Home entertainment’ activities before the quarantine ($r = .291, p = .001$) and the solo children’s activities of the same category during the quarantine ($r = .266, p = .003$). No other correlations were statistically significant. Regarding boys and girls, it was shown that girls tended to engage more in ‘Preacademic’ activities, both before ($r = .449, p < .001$) and during the quarantine ($r = .356, p < .001$).

3.3 Developmental Significance of the Described Activities

Parental perceptions of the developmental significance of the described daily activities are presented in Table 4. Evaluations for each item comprising the activity categories of the questionnaire were summed and averaged in order to produce mean scores for these items. The mean scores of the items comprising each activity category were then averaged to give a sample score representing the developmental significance parents attributed to each of the five activity categories (Table 5). The ‘Pre-academic’ and ‘Recurrent Outings’ categories were rated significantly higher than the rest, while the ‘Play’ and ‘Household & self-care’ categories received significantly higher values from those of the ‘Home entertainment’ group, as indicated by the performed one way ANOVA on Ranks ($H(4) = 275.7, p < .001$).

Table 4. Developmental significance assigned to each item of the five activity categories by parents ($N=116$).

Categories of activities	Developmental significance	<i>M</i> (<i>SD</i>)
Household & self-care	#8 Gets dressed alone	3.2 (0.81)
	#1 Picks up his/her things	2.9 (0.77)
	#2 Cleans up if s/he makes a mess	2.7 (0.79)
	#3 Tidies up his/her room	2.6 (0.84)
	#9 Showers by him/herself	2.5 (1.12)
	#7 Prepares something to eat	2.3 (0.93)
	#5 Helps in tidying up the house	2.1 (0.93)
	#6 Helps making the table	2.0 (0.93)
	#4 Makes up his/her bed	1.9 (1.03)
Home entertainment	#12 Plays/uses the computer	1.4 (0.86)
	#11 Watches video or DVD	0.8 (0.68)
	#10 Watches TV	0.7 (0.69)
Recurrent Outings	#18 Plays with other children	3.4 (0.69)
	#21 Plays outside	3.3 (0.72)
	#14 Goes for walks with an adult	2.1 (0.82)
	#16 Visits friends to play	2.1 (0.96)
	#15 Visits friends or relatives	2.6 (0.91)
	#13 Goes to the theatre or cinema with an adult	2.3 (0.90)
	#17 Goes shopping with someone from the family	1.9 (0.86)
Indoors Play	#20 Plays with constructive toys	2.6 (0.76)
	#23 Plays with toy cars, dolls or other toys	2.6 (0.84)
	#24 Plays with board games	2.6 (0.86)
	#19 Plays with puzzle	2.5 (0.92)
Pre-academic	#27 Tries to write	3.3 (0.72)
	#28 Draws	3.1 (0.81)
	#25 Browses books with pictures	3.0 (0.81)
	#22 Plays with educational toys	2.1 (0.90)
	#26 Tries to read	2.1 (0.94)
	#30 Sings	2.4 (1.14)
	#29 Pretends to read at bedtime	2.3 (1.18)

Table 5. Summary statistics for average per activity category developmental significance ($N = 116$)

Activity Categories	<i>M</i> (<i>SD</i>)	Pre-academic	Recurrent Outings	Play	Household & self-care
Pre-academic	2.9 (0.60)				
Recurrent Outings	2.8 (0.58)	NS (.955)			
Indoors Play	2.6 (0.61)	.023	NS (.187)		
Household & self-care	2.5 (0.65)	< .001	.009	NS (.346)	
Home entertainment	1.0 (0.54)	< .001	< .001	< .001	< .001

In order to examine whether parent's perceptions of the developmental significance of the enlisted activity categories were related to the reported frequencies of children's solo and parent-child joint activities, we performed Pearson correlation analyses which are presented in Table 6. Results yielded positive and statistically significant correlations in all but one cases, namely parent-child joint play during the quarantine, showing that the higher the attributed developmental significance the higher the perceived engagement in both solo and joint activities.

Table 6. Pearson r correlation coefficients between parental perceived developmental significance of the five activity categories and the corresponding reported frequencies of the solo and joint activities before and during the quarantine

Developmental significance	Solo before	Joint before	Solo during	Joint during
	frequency $r(p)$	frequency $r(p)$	frequency $r(p)$	frequency $r(p)$
Recurrent Outings	.378 (<.001)	.226 (.014)	Not applicable	Not applicable
Household and self-care	.375 (<.001)	.275 (.002)	.458 (<.001)	.246 (.007)
Indoors Play	.332 (<.001)	.308 (<.001)	.278 (.002)	.034 (NS .712)
Pre-academic	.364 (<.001)	.371 (<.001)	.359 (<.001)	.317 (<.001)
Home entertainment	.289 (.001)	.244 (.008)	.317 (<.001)	.286 (.002)

3.4 Mothers and Fathers

3.4.1 Demographic Data

Participant mothers' and fathers' demographic characteristics are displayed in Table 7.

Table 7. Fathers' and mothers' demographic characteristics

Demographic characteristics	Fathers ($n = 53$)	Mothers ($n = 63$)	P
Parent's age in years $M(SD)$	41.1 (4.7)	38.2 (3.6)	< .001
Athens/Province (%)	44/56 (%)	42/57%	.897
Education (College or lower level/University or higher level, %)	23/30 (43/57%)	16/47 (25/75%)	.065
Working during quarantine (no/yes, %)	11/42 (21%/79%)	25/38 (40%/60%)	.046
Daily hours available for activities with the child before quarantine $M(SD)$	2.4 (1.8)	3.5 (3.3)	.008
Daily hours available for activities with the child during quarantine $M(SD)$	5.0 (3.3)	5.9 (3.1)	.038
Parental perception of the effect of quarantine on their joint activities with children (positive / neutral or negative, %)	38/15 (72%/28%)	49/14 (78%/22%)	.591

3.4.2 Mothers' and Fathers' Participation in Joint Activities with Their Children

Results showed that overall mothers, compared to fathers, reported higher participation in joint activities with their children, before and during the quarantine, with the exception of the 'Play' category. Differences reached statistical significance in the case of 'Pre-academic' and 'Household & self-care' activities, before and during the quarantine (pre-academic: $M_{\text{mothers before}} = 2.7$, $SEM = 0.07$ vs $M_{\text{fathers before}} = 2.1$, $SEM = 0.10$, $t(114) = 4.90$, $p < .001$; $M_{\text{mothers quarantine}} = 2.9$, $SEM = 0.07$, $M_{\text{fathers quarantine}} = 2.4$, $SEM = 0.10$, $t(114) = 4.70$, $p < .001$); household & self-care: $M_{\text{mothers before}} = 2.8$, $SEM = 0.08$ vs $M_{\text{fathers before}} = 2.1$, $SEM = 0.10$, $t(114) = 4.88$, $p < .001$; $M_{\text{mothers quarantine}} = 3.0$, $SEM = 0.08$ vs $M_{\text{fathers quarantine}} = 2.4$, $SEM = 0.10$, $t(114) = 4.25$, $p < .001$). A marginal statistical significance was observed regarding the 'Home entertainment' category before the quarantine ($M_{\text{mothers before}} = 1.6$, $SEM = 0.09$ vs

$M_{\text{fathers before}} = 1.9$, $SEM = 0.11$, $t(114) = 1.91$, $p = .0578$, power: .475 with $\alpha = .05$), which disappeared during quarantine ($M_{\text{mothers quarantine}} = 2.0$, $SEM = 0.10$ vs $M_{\text{fathers quarantine}} = 2.2$, $SEM = 0.11$, $t(114) = 1.04$, $p = .300$ NS).

3.4.3 Mothers' and Fathers' Perceptions of the Developmental Significance of Activities

Regarding the perceived developmental significance of the five activity categories, the t-test comparisons showed that mothers and fathers did not display significant differences with the exception of the 'Home entertainment' category which was perceived by mothers as lower in developmental significance ($M_{\text{mothers}} = 0.9$, $SEM = 0.06$ vs $M_{\text{fathers}} = 1.1$, $SEM = 0.07$, Mann-Whitney $U(114) = 1273.5$, $p = .025$).

3.5 Parental Perception of the Effect of Quarantine on Joint Activities

The majority of parents ($n = 87$) reported a positive effect of the quarantine on joint parent-child activities. They were of a higher educational background (positive: $n = 87$, $M = 2.9$, $SEM = 0.11$; neutral/negative: $n = 29$, $M = 2.4$, $SEM = 0.17$, Mann-Whitney $U(114) = 941.0$, $p = .032$) whereas positively affected parents also reported more hours devoted to joint parent-child activities ($n = 87$, $M = 6.2$, $SD = 4.4$ vs $n = 29$, $M = 4.4$, $SD = 3.0$, Mann-Whitney $U(114) = 904$, $p = .022$).

4. Discussion

This study examined how families with young children in Greece adapted to the COVID-19 quarantine in the early days of the pandemic (April-May 2020) when very strict restrictions involving social distancing, school closure and working from home were imposed. By means of the CDA-PB scale (Petrogiannis et al., 2013), the study sought parental perceptions of the frequency of children's engagement in 5 different kinds of activities taking place in the family context as well as parents' participation in them, both before and during the quarantine. This allowed us to look for changes and continuities in family routines during a period of disruption in daily habits resulting from the pandemic, and to explore their impact on children's solo and parent-children joint activities.

Overall, our results showed increases in the frequency of occurrence in all the categories of activities depicted by the questionnaire during the quarantine, solo and joint, with the exception of out of home social engagements, restricted because of the pandemic. Similar changes in the frequency of family-based activities have been reported by other studies on the COVID-19 quarantine in different countries, associated mainly with the increased time parents and children spent at home (Lee et al., 2021; Toran et al., 2021; Vukovic et al., 2021). These changes have mostly been described as stressful for both children and parents and have been associated with difficulties in parenting practices (DiGiorgio et al., 2020; Russell et al., 2020; Spinelli et al., 2020). A limited number of studies have reported positive experiences and improved family relationships as well (Ares et al., 2021; Toran et al., 2021). In our results, as in previous research, the majority of parents reported spending more hours in joint activities with their children during the quarantine, a finding which is in accordance with the increased reported frequency of parent-child joint activities for the same period. Albeit COVID-19 quarantine was a crisis period, most parents in the present study and the most educated ones, reported a positive effect of the increased time spent in joint activities with their children. This is an important finding which adds a positive perspective to the large number of studies that have mostly revealed the negative outcomes and the difficulties families experienced during the quarantines in different countries. It also points out that family based daily activities are contexts of parent-child interactions that may act protectively for the wellbeing of both parents and children. For instance, our results showed an increase in children's engagement in screen-based recreational activities, a finding that has generated concern regarding its impact on children (Cachón-Zagalaz et al., 2021; Moore et al., 2020; Schmidt et al., 2020). In our study, this increase was accompanied by a simultaneous increase in joint parent-child screen-based activities, indicating that families had the ability to balance potentially harmful outcomes with strategies that may have a positive impact on children as well as family habits and relationships (Archbell et al., 2020).

Because of the quarantine and the increased time available for home-based daily activities, it is not surprising that children and parents in our study were more involved in home-based everyday activities. Of importance in our findings however, is an emerging pattern in the detected increases: activities, both solo and joint, with higher occurrence frequencies before the quarantine remained at higher levels during the quarantine and those with lower frequencies before also displayed lower frequencies during quarantine. This may indicate that families had established routines which remained relatively unaffected by the current situation. Parental beliefs about the developmental significance of the described categories of activities may serve as one plausible explanation of this continuity. As results showed, highly valued activities in terms of their developmental significance, were positively and significantly correlated with both children's solo and parent-child joint engagement, indicating that the higher the attributed value of an activity category the higher the frequency of its occurrence, before and during the quarantine. This is indicative of everyday activities being culturally rooted routines and practices which tacitly

organize the experiences of children (Rogoff et al., 2007). One exception to this tendency was depicted in the parent-child joint play during the quarantine which did not correlate with the value which parents attributed to play. Although this finding is difficult to explain on the basis of the current analyses, it may possibly be related to the increased frequency of joint play because of the time spent at indoors activities.

At the same time, a rough mapping of families' daily routines on the basis of our findings, shows a different pattern in parental reports on children's solo and parent-child joint activities, which cannot be explained on the basis of parental values alone. For example, parents reported higher frequencies for play and screen-based recreational activities when considering children's solo engagement but lower when reporting on parental participation in these activities. Similarly, parents perceived household & self-care activities as occurring more frequently when involving joint rather than solo engagement. As mentioned before, time allocated to joint activities and parental availability may represent important mediating variables along with parental values. Yet, considering children's own contribution to the formation of everyday activities and experiences, appears to be important to more fully understand family routines (Gracia, 2018), something not pursued in the present study.

Regarding mothers and fathers, our results, in accordance with previous research, showed an increase in paternal involvement with children during the quarantine, but also an overall higher time allocation to child care for mothers compared to fathers (Mangiavacchi et al., 2020; Russell et al., 2020). Accordingly, mothers reported higher participation in joint activities, which reached statistical significance in 'pre-academic' and 'household & self-care' categories of activities before and during the quarantine. Two exceptions to the above were noted, regarding joint 'home entertainment' activities, which were marginally higher for fathers before but not during the quarantine as well as 'play' activities, in which fathers reported higher but not statistically significant participation. Such differences may be attributed to the fact that in our sample more fathers than mothers kept working during the quarantine, but it also reflects the higher maternal involvement in child care witnessed in research not related to the quarantine condition (Craig, 2006; Craig & Mullan, 2011). Also, the higher paternal involvement in "home entertainment" activities can be explained by the higher developmental significance fathers attributed to this category.

With respect to children's age and gender, our results showed higher engagement in 'household & self-care' as well as 'home entertainment' activities during the quarantine for older children and higher involvement in 'pre-academic' activities for girls, findings which are in accordance with previous research (Cachón-Zagalaz et al., 2021; Gracia, 2018).

5.1 Conclusion

The present study revealed changes but also important continuities in Greek families' daily activities during the COVID-19 quarantine. Changes were mainly reflected in the increased frequency of engagement in both solo and parent-child joint daily activities, and were perceived by parents as having a positive impact on participating families. At the same time, the detected continuities in children's solo and parent-child joint activities, highlight the links between the reported activities and parental values regarding their developmental significance for children. It was shown that family routines established in the pre-quarantine period on the basis of parental values, continued to exist during the quarantine thus forming significant and rather stable contexts for parent-child interactions which provide continuity in periods of crisis. Thus, identifying changes and continuities in family routines during periods of disruptions of daily habits has a threefold significance: first, it contributes to better understand the effects of such disruptions on children and family functioning (Ares et al., 2021) and to support families in ways meaningful to them; second, it reveals that daily activities are culturally meaningful contexts of children's engagement with parents (Gaskins, 2000; Göncü, 1999); third, it assists our understanding of how children's experiences in the context of daily activities are shaped in non-crisis periods.

5.2 Limitations

Our findings are also subject to certain limitations. First of all, the small and convenient sample of this study restricts the generalization of its results. Second, the fact that the majority of participating parents were of high educational background and also kept on working during the quarantine, may have positively affected the perceived impact of the quarantine on family lives. Third, parent reports for the pre-quarantine period were largely based on their recall of activities prior to the lockdown, something that may have affected their recall accuracy. Finally, seeking children's own accounts on the issue under investigation and the adoption of qualitative methods, could have complemented our findings in important ways.

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