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COVID-19 and home confinement: A study on fathers, father–child relationships and child adjustment

Carmen Trumello¹ | Sonia M. Bramanti¹ | Lucia Lombardi¹ | Piera Ricciardi¹ |
Mara Morelli²  | Carla Candelori¹ | Monia Crudele¹ | Elena Cattelino³ |
Roberto Baiocco⁴ | Antonio Chirumbolo⁵ | Alessandra Babore¹ 

¹Department of Psychological, Health and Territorial Sciences, D'Annunzio University of Chieti–Pescara, Chieti, Italy

²Department of Dynamic and Clinical Psychology, and Health Studies, Sapienza University of Rome, Rome, Italy

³Department of Human and Social Sciences, University of Aosta Valley, Aosta, Italy

⁴Department of Developmental and Social Psychology, Sapienza University of Rome, Rome, Italy

⁵Department of Psychology, Sapienza University of Rome, Rome, Italy

Correspondence

Alessandra Babore, Department of Psychological, Health and Territorial Sciences, D'Annunzio University of Chieti–Pescara, Via Dei Vestini, 66100 Chieti, Italy.
Email: a.babore@unich.it

Abstract

Background: The purpose of this study was to explore fathers' adjustment and father–child relationships during the first peak of the coronavirus disease 2019 (COVID-19) outbreak (April 2020). More particularly, the study analysed paternal perceptions of changes concerning familial economic conditions and children's psychological difficulties (viz., emotional problems and hyperactivity) during the lockdown produced by the current pandemic. Furthermore, we investigated the following correlates of fathers' parenting stress: socio-demographic condition, paternal individual stress, anxiety, depression and changes in the father–child relationship during the outbreak.

Methods: A total of 102 fathers (mean age = 41.60 years; SD = 11.54) with minor children were recruited through an online survey and reported data about their socio-economic condition, anxiety, and depressive levels, parenting stress, offspring's adjustment, and changes in their relationship with their children.

Results: As for the economic conditions, participants were equally distributed between those who did not perceive changes and those who perceived a worsening. With regard to changes in the child's psychological difficulties, results showed that levels of children's emotional problems and inattention/hyperactivity had significantly increased during the lockdown period. A multiple linear regression analysis highlighted that the principal predictor of paternal parenting stress was living in the regions most affected by the COVID-19 pandemic, followed by high levels of paternal anxiety symptomatology and high levels of worsening of the relationship with the child during the pandemic.

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Conclusions: Overall, our study suggests to consider the effects of COVID-19 on fathers as well, as they have been rather overlooked by previous research that has mainly focused on mothers, and to plan specific interventions able to also take them into account.

KEYWORDS

anxiety, child adjustment, COVID-19, fathers, parent–child relationship, parenting stress

1 | INTRODUCTION

Parenting stress—defined as the psychological burden derived from the discrepancy perceived by parents between the needs related to parenting and the parental resources (Deater-Deckard, 1998)—may negatively affect parents' attitudes towards the child and the quality of their interactions (Morelli et al., 2020). A recent meta-analysis (Pinquart, 2017) underscored that, compared with mothers, fathers were underrepresented in studies on parenting stress, although it has been shown that fathers' parenting stress is associated with less involvement (Bronte-Tinkew et al., 2010) and long-term effects on child difficulties (Wilson & Durbin, 2010).

Previous studies found that the parent–child relationship may also be affected by adverse life events (Ren et al., 2019), as socio-economic disadvantages (Malmberg & Flouri, 2011), a preterm birth (Candelori et al., 2015), serious childhood illness (Pinquart, 2013), a parent's serious illness (Babore et al., 2019), divorce or separation (Kalmijn, 2013) and natural disasters (Dyb et al., 2011). Existing research suggested that stressors affect father–child relationships significantly more than mother–child relationships (Almeida et al., 1999).

The current pandemic produced by the COVID-19 could be considered a stressful life event. In Italy, the first outbreak was detected in Lombardy, on 21 February 2020. After that, thousands of cases have occurred, with the following regions most affected during the first wave of the pandemic: Lombardy, Piedmont, Emilia Romagna and Veneto; each one has had more than 10,000 cases of infected individuals in less than 1 month from the beginning of the outbreak (Johns Hopkins University, 2020).

To face this critical emergency and reduce the risk of spreading the virus, the Government issued a legal decree (Decreto del Presidente del Consiglio dei Ministri [DPCM], 2020) that imposed a lockdown in the entire national territory from 11 March to 4 May 2020, with the closure of all public places (e.g., schools, parks and shopping centres), the suspension or remodelling of work activities (with the activation of smart-working from home, except for professional categories that provide essential service for the community), and a ban on leaving home, except for proven work and health needs and for reasons of necessity.

This critical emergency has produced consequences not only for work activities and economic income but also on mental health and stress levels (Mazza et al., 2020; Özdin & Özdin, 2020), individual and familial daily routines and functioning (Bai et al., 2020), parent–child relationships and children's outcomes (Jiao et al., 2020; Zhang

Key messages

- This research tried to address the lack of studies on fathers during the COVID-19 pandemic
- Half of fathers perceived a worsening of economic condition during the pandemic
- Levels of children's emotional problems and inattention/hyperactivity significantly increased during the lockdown period
- High anxiety levels, perception of a worsening in the relationship with the child and living in the regions with the highest rates of contagion were risk factors associated with fathers' parenting stress
- It is necessary to consider and support fathers' psychological health and father–child relationships through targeted interventions

et al., 2020). The negative effects could be more evident in individuals living in the regions most affected by the virus (Özdin & Özdin, 2020).

Changes produced by the COVID-19 pandemic on daily routines, work activities and socio-economic conditions have found to be associated with psychological distress (Bai et al., 2020; Zhang et al., 2020). Previous research on a sample of fathers has investigated the association between work situations and relationships with children, showing that a negative economic status increases parenting stress levels (Bronte-Tinkew et al., 2010). The research revealed that high levels of stress, depression, and anxiety reduced parental self-efficacy and competence (Crnic & Ross, 2017), with consequences on the quantity and quality of parent–child interactions and children's adjustment (Ramchandani & Psychogiou, 2009). Indeed, fathers' mental health difficulties have been associated with hostile parent–child interactions and emotional-behavioural difficulties in children (Giallo et al., 2020).

To our knowledge, no previous study has explored fathers' emotional distress and father–child relationships during the COVID-19 pandemic. With the current research, we pursued a twofold objective. First, we aimed to investigate paternal perceptions of changes during the outbreak concerning familial economic conditions and children's psychological difficulties (viz., emotional problems and hyperactivity). Furthermore, we analysed if and to what extent paternal psychological adjustment, father–child relationships and socio-demographic

conditions (e.g., smart-working, economic conditions, living in the regions with the highest rates of contagion and deaths caused by COVID-19, and child's gender and age) were associated with fathers' parenting stress.

2 | METHODS

2.1 | Study design and procedure

We conducted a cross-sectional study using an online survey during the first peak of the COVID-19 pandemic, from 21 April to 5 May 2020 (lasting 2 weeks). Participants, who were recruited on the Internet through mainstream social media (i.e., WhatsApp and Facebook) from all Italian regions, were informed about the purpose and the procedure of the study and gave their consent. Participation was anonymous, voluntary and not compensated.

The procedure and all the questionnaires used in this survey were fully compliant with the indications of the Declaration of Helsinki. The Institutional Review Board of the Department of Psychological, Health and Territorial Sciences of the University "G. d'Annunzio" (Protocol number: 20017) approved the study.

2.2 | Participants

A total of 102 fathers with children aged between 0 and 18 years took part in this study. The mean age of the participants was 41.60 years (SD = 11.54; range 15–62). Eighty-nine per cent of participants had a current marital relationship.

Regarding the offspring's characteristics, the children had a mean age of 8.50 years (SD = 5.68), and most of them (59%) were males.

Most participants had a medium-high socio-economic status (income \geq 28,000 euros per year).

2.3 | Measures

2.3.1 | Socio-demographic information

We created an ad hoc questionnaire to explore socio-demographic data to assess fathers' general information (e.g., age, profession and region of residence), changes caused by the COVID-19 pandemic (in socio-economic status and employment status before and during the lockdown) and the child's characteristics (gender and age).

2.3.2 | Parenting Stress Index Short Form

To assess the fathers' parenting stress, we used the subscale Parent-Child Dysfunctional Interaction (P-CDI) of the Parenting Stress Index Short Form (PSI-SF; Abidin, 1995) that measures the parent's view of

expectations and interactions with the child. The P-CDI scale consists of 12 items (e.g., 'My child rarely does things for me that make me feel very good') scored on a 5-point scale. The reliability of this tool was excellent (Cronbach's $\alpha = .906$).

2.3.3 | Perceived Stress Scale

The Perceived Stress Scale (PSS) is a valid self-report instrument to assess the perceived stress in the last month (Cohen et al., 1983). This tool measures life events considered and perceived as stressful. It consists of 10 items evaluated on a 5-point Likert scale. The items concern the uncontrollable, unpredictable and overloaded life events that the individuals have experienced (sample items: 'In the last month, how often have you been upset because of something that happened unexpectedly?'). The total scores range from 0 to 40, with higher levels reflecting higher levels of perceived stress. The reliability was very good (Cronbach's $\alpha = .881$).

2.3.4 | Hospital Anxiety and Depression Scale

To assess states of anxiety and depression, we used a reliable self-report instrument, the Hospital Anxiety and Depression Scale (HADS) (Zigmond & Snaith, 1983). It consists of 14 items, rated on a 4-point Likert scale and is composed of two scales that evaluate anxiety (HADS-A; sample item: 'I feel tense or wound up') and depressive symptoms (HADS-D; sample item: 'I look forward to enjoying things'). The total score ranges between 0 and 21 for each scale, with the higher score denoting a greater number of symptoms of either anxiety and/or depression. The reliability of the full scale was very good (Cronbach's $\alpha = .849$).

2.3.5 | Strengths and Difficulties Questionnaire

To assess children's emotional and behavioural problems, we used the parent-form of the Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997). It is a 25-item screening instrument rated on a 3-point Likert scale, composed of five subscales that evaluate emotional symptoms, behavioural problems, inattention/hyperactivity, peer problems and prosocial behaviour. In this study, we considered the two subscales of emotional symptoms (sample item: 'Nervous or clingy in new situations, easily loses confidence') and inattention/hyperactivity (sample item: 'Restless, overactive, cannot stay still for long'). Both scales were administered to fathers twice: the first with the instruction to refer to the past 2 weeks and the second thinking of their child's adjustment before the start of the COVID-19 emergency. Higher scores reflect greater difficulties. Cronbach's alphas for the past and current form were satisfactory (respectively .701 and .791).

2.3.6 | Change in the relationship with the child

Fathers were asked to answer questions created ad hoc to evaluate the change in the relationship with their child during the COVID-19 pandemic. This questionnaire consists of 16 items, assessed on a 3-point Likert. It investigates parental involvement (sample item, 'During this emergency period, we take more pleasure doing things together, for example playing, reading, talking ...'), and the parent's perception of the child's attitude (sample item 'Since this emergency started, I feel that my child is moving away from me'). The total score ranges between 0 and 48; the higher the score, the worse the relationship during the COVID-19 pandemic. In this study, the reliability was satisfactory (Cronbach's $\alpha = .701$).

3 | DATA ANALYSES

Analyses were performed with the software IBM Statistical Package for Social Sciences (SPSS, version 22), with the significance level of .05. All the variables were preventively tested to check their distribution, by examining Q-Q plots and calculating the values of skewness and kurtosis (a distribution was considered normal when both skewness and kurtosis were within the range $[-1, 1]$) (Marcoulides & Hershberger, 1997). All the variable distributions were found to be acceptably normal.

An analysis of frequencies was used to explore paternal perceptions of changes during the outbreak concerning familial economic conditions. Paired *t* tests were conducted to compare fathers' perceptions of the child's emotional problems and hyperactivity before the pandemic and during the lockdown.

To test predictors of paternal parenting stress, a stepwise multiple regression analysis was conducted with socio-demographic condition,

stress levels and changes in the father-child relationship during the current pandemic entered as predictors. The socio-demographic state included: fathers' age, familial annual income, a dummy variable for the region of family residence (1 = living or 0 = not in the most affected regions), a dummy variable for the method of working during the pandemic (1 = working or 0 = not from home), child's sex (dummy variable with 1 = male and 0 = female) and age. The distress was evaluated by levels of perceived stress (PSS), anxiety (HADS-A) and depression (HADS-D). Changes in the father-child relationship during the pandemic were investigated through the change in the relationship with the child (CRC).

4 | RESULTS

The first purpose of the study was to investigate paternal perceptions of changes during the outbreak concerning familial economic conditions and the child's psychological maladjustment (viz., emotional problems and hyperactivity). As for economic conditions, the sample was equally distributed between those who did not perceive changes (49.0%) and those who perceived a worsening (50.0%); only 1% of the sample noted an improvement. With regard to changes in the child's psychological difficulties (in terms of emotional problems and hyperactivity), the paired *t* test results (summarized in Table 1) showed that levels of children's emotional problems and inattention/hyperactivity significantly increased during the lockdown period.

An additional aim was to analyse factors associated with fathers' parenting stress. Results of the multiple linear regression analysis (Table 2) highlighted that the principal predictor was living in the regions most affected by COVID-19, followed by high levels of paternal anxiety symptomatology and high levels of worsening of the relationship with the child during the pandemic. No associations of

	Before the COVID-19 pandemic, M (SD)	During the COVID-19, M (SD)	<i>T</i>	<i>p</i>
Emotional symptoms	1.34 (1.74)	2.01 (2.20)	4.274	.000
Inattention/hyperactivity	3.17 (1.80)	3.86 (2.26)	4.335	.000

TABLE 1 Levels of children's emotional problems and inattention/hyperactivity before and during the COVID-19 pandemic

Independent variables	Δ Adj. R^2	SE	β	<i>T</i>	<i>p</i>
Living in the regions with high contagion rates	.127	.372	.374	3.253	.002
HADS-A	.083	.028	.309	2.806	.007
CRC	.046	.034	.237	2.218	.030

TABLE 2 Regression analysis for fathers' parenting stress (dependent variable)

Note: $R = .538$; $R^2 = .290$; Adjusted $R^2 = .256$; $F_{3,63} = 8.565$; $p < .001$. The following independent variables were not statistically significant: fathers' perceived stress ($T = .756$; $p = .453$), and depression ($T = -.133$; $p = .894$), familial annual income ($T = -.333$; $p = .740$), the method of working during the pandemic ($T = 1.580$; $p = .119$), child's sex ($T = -.653$; $p = .516$), and age ($T = -.051$; $p = .960$). Abbreviations: CRC, change in the relationship with the child; HADS-A, Hospital Anxiety and Depression Scale anxiety level.

the dependent variable were observed with fathers' perceived stress, depression, and age, familial annual income, the method of working during the pandemic, child's sex, or age.

5 | DISCUSSION

This study aimed to analyse father-child interactions during the COVID-19 outbreak, considering the paternal perceptions of the child's psychological maladjustment—in terms of emotional problems and hyperactivity—and the quality of father-child relations.

To our knowledge, a few studies analysed the effects of the COVID-19 pandemic on parental mental health and child's adjustment considering both parents (Bai et al., 2020; Orgilés et al., 2020), but no study has specifically investigated the father-child relationship.

The first aim was to evaluate fathers' perceptions of changes during the lockdown in terms of economic conditions and the child's psychological difficulties. Regarding family economic conditions, half of the participants perceived a worsening. The restrictive measures used to manage the pandemic had a substantial economic impact, above all in the regions with the highest rates of contagion and deaths caused by COVID-19 (Shigemura et al., 2020), increasing unemployment and financial insecurity. The fact that half of the fathers indicated a worsening of the economic situation is an alarming result to be taken into consideration, as previous studies showed that socio-economic disadvantage is linked to paternal psychological distress and child behavioural problems (Flouri et al., 2019).

Regarding the child's psychological difficulties, fathers referred to an increase in children's levels of emotional problems and inattention/hyperactivity. This is consistent with previous findings in recent literature. Available studies from different countries underlined the psychological impact of the COVID-19 outbreak on children (Babore et al., 2021; Jiao et al., 2020; Pisano & Galimi, 2020). During this unusual period, as also suggested by the United Nations (2020), lifestyle changes (e.g., social isolation, interruption of school and educational activity, and uncertainty for the future) and family stress due to home confinement could have produced a negative effect on children's and adolescents' emotional problems. This worsening has also been detected by the participants in this research.

An additional aim was to analyse some risk factors associated with fathers' parenting stress. The results of the multiple linear regression analysis showed three statistically significant variables: living in the regions with high contagion and death rates, high levels of paternal anxiety and high levels of perceived worsening of the relationship with the child during the pandemic. As for the first factor, the study result is consistent with previous literature among healthcare workers and the general population, finding that living in regions with higher rates of contagion and death is a risk factor for greater psychological distress (Özdin & Özdin, 2020; Trumello et al., 2020). This association was not previously investigated in the specific context of parenting and COVID-19. It may be hypothesized that in regions with the highest contagion rates, there was a greater perceived risk of

contracting the virus than in the rest of Italy and this may have affected the quality of father-child interactions.

Paternal parenting stress was also predicted by fathers' high anxiety levels. This result is quite new, as most previous studies predominantly addressed depressive rather than anxious symptoms in mothers rather than fathers. The association between anxiety and parenting stress was evidenced by a recent study conducted on mothers (Tsotsi et al., 2019) highlighting that anxious mothers tend to feel less competent in their parental role. This issue is particularly critical in the specific context of the lockdown caused by the first wave of the pandemic, when anxiety levels increased due to the negative influence of the outbreak in different areas (e.g., health, economy, job and social relationships), as already reported in previous studies in the general population (Fancourt et al., 2020; Salari et al., 2020). During such times of uncertainty and fear, with an unprecedented lack of resources and access to the usual supports (both familial and social), parental anxiety and constant worries may have had an impact on their perception of parenting skills necessary to cope with the difficult and new situation, and in turn on parenting stress, above all for fathers. Indeed, as suggested by a recent Italian study (Del Boca et al., 2020), during the lockdown, there was an increased contribution by men to childcare with consequent higher rates of caregiver burden than before the pandemic (Russell et al., 2020) and more stress in their parental role.

Finally, the study findings revealed that another significant predictor of paternal parenting stress was the level of perceived worsening of their relationship with the child during the pandemic. The higher the perceived worsening, the higher the parenting stress. This result should be interpreted in the specific context of COVID-19; with restrictive measures and home confinement, there were increased demands on fathers to develop new routines and limits to negotiate rules that, in the pre-pandemic period, were less problematic (e.g., use of shared spaces or use of electronic devices) or non-existent (e.g., restrictions on many activities). Research has underscored that when children are not at school, they are less physically active, more bored, and spend more time in front of screens (Brazendale et al., 2017), increasing the opportunities for conflict with parents. Overall, it may be argued that in everyday life, parental responsibilities and duties are shared with other types of educators, such as teachers, grandparents and sport coaches. In the social isolation produced by the lockdown, parents' tasks were an exclusive burden on themselves, increasing the perception of the demands related to their role. This could be especially true for fathers, who are usually less involved than mothers in childcaring.

Several limitations should be considered in interpreting the results. First is the small sample size that may limit the generalizability of the results. In addition, we used self-report questionnaires that do not allow for a clinical diagnosis. Furthermore, the cross-sectional nature of the research design prevents us from drawing conclusions as to the directionality of the associations. Finally, all measures of the children relied on the fathers' report collected at one time measure, and this does not allow us to exclude a retrospective bias.

Despite these limitations, the current findings offer insights into the potential consequences of the COVID-19 epidemic on father-child relationships. The existing literature has mainly focused on mothers' adjustment and mother-child relationships, overlooking the importance of the paternal role (Babore et al., 2014). Our research tries to address the lack of studies on fathers during the current pandemic. Given the social, economic and psychological impact of COVID-19, many fathers (and in general all caregivers) are likely facing an unprecedented increase in daily stressors (even if they are not dealing with immediate illness) that represents a significant threat to their well-being, to their parenting skills and consequently to their relationship with the child. Our data suggest some factors to consider in detecting fathers more at risk of high parenting stress, that is, high anxiety levels, perception of a worsening in their relationship with the child, and living in the regions with the highest rates of contagion.

As the pandemic is ongoing and the psychological impacts on individuals and families are likely to be longstanding, it is necessary to support both parents' and children's psychological health through targeted interventions that consider either individual or relational levels.

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DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ORCID

Mara Morelli  <https://orcid.org/0000-0003-3463-3685>

Alessandra Babore  <https://orcid.org/0000-0002-7317-3733>

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