

Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

### EUROPEAN PAEDIATRIC ASSOCIATION

## EUROPEAN EUROPEAN PAEDIATRIC ASSOCIATION



### Effects of Coronavirus Disease 2019 (COVID-19) on Family Functioning

Pietro Ferrara, MD<sup>1,2,3</sup>, Giulia Franceschini, MD<sup>3</sup>, Giovanni Corsello, MD<sup>1,2</sup>, Julije Mestrovic, MD<sup>1,4</sup>, Ida Giardino, MD<sup>5</sup>, Mehmet Vural, MD<sup>1,6</sup>, Tudor Lucian Pop, MD<sup>1,7</sup>, Leyla Namazova-Baranova, MD<sup>1,8</sup>, Eli Somekh, MD<sup>1,9</sup>, Flavia Indrio, MD<sup>1,10</sup>, and Massimo Pettoello-Mantovani, MD, PhD<sup>1,10</sup>

ore than a year and a half after the first clinical manifestations of coronavirus disease 2019 (COVID-19) were reported in Wuhan, China, 1,2 the magnitude of the pandemic across the globe and its related clinical and social effects³ remain unclear.⁴ The pandemic has affected lives and sparked concerns about everything from health to job security. In high–Gross Domestic Product (GDP) countries, despite trillions in coronavirus aid released by governments, many families still struggle to pay for basic necessities like food and rent, and these difficulties worsened during the pandemic. The general social uncertainty caused by the pandemic seems to have also affected family resilience, weakening the ability of individuals to confront challenges, survive difficulties, and thrive in adversities as a group. 7.8

To reduce community spread of the virus, many countries adopted unprecedented confining measures, including the restriction of populations in their homes and reduction of interpersonal contacts. Confinement, quarantine measures for suspected COVID-19 cases, and social distancing were prolonged, and their effectiveness was debated at social, scientific, and political levels. However, although their prevention value in limiting viral spread is generally recognized, it is also widely accepted that social isolation measures have upended family lives. In particular, they have affected family functioning and parenting, which are significantly associated with the physical and psychosocial functioning of children and adolescents. 10

This commentary, authored by the Working Group on Social Pediatrics of the European Paediatric Association/Union of National European Paediatric Societies and Associations, briefly discusses the effects of the confinement measures taken to combat the COVID-19 pandemic on family functioning. Our aim is to raise the awareness of pediatricians, social work professionals, and policy makers, as knowledge of the effects of social restrictions on family functioning may contribute to the efforts of national health systems to be effectively prepared to handle the social effects of future public health crises. Adopting a more mindful and coordinated approach may help overcome divergences across countries, particularly in terms of complex sociopolitical realities.

# Family Functioning: a Social and Structural Asset of Global Family Environment

The physical and psychosocial performance of children and adolescents challenged by adversities is significantly related to a number of family factors, including family functioning and parenting, which are typically embedded within the context of a family. Specific variables that characterize parent—child relations in each family also may play a role in maintaining balanced physical and psychosocial functioning in children struggling with external events affecting their families. Parent—child dyadic rigidity, together with the presence or absence and the magnitude of such variables as unstable family income, broken home, family mobility, parent mental health, number of children in the family, single-parent family, and parental past, may accelerate a deterioration of intrafamily relationships. In contrast, parent—child interaction processes of dyadic positive affect and flexibility may help prevent possible negative impacts on children's daily life and contribute to an effective parent—child coregulation. In the contract of the contribute to an effective parent—child coregulation.

Family functioning is a multidimensional concept that refers to the dynamics and quality of family members' relationships. This is based on the organization and level of conflict and cohesion internal to families and in large part on their adaptability and communication skills. In general, a family environment characterized by cohesion, clear communication ability, well-defined roles, and good emotional balance and regulation describes a positive family functioning. <sup>11,12</sup> Inadequate or defective family functioning refers to families showing disorganization characterized by unclear family roles, high levels of inner conflict situations, and poor affective and behavioral control. <sup>11,12</sup> Family structure also plays an important role in achieving balanced family functioning. <sup>13</sup>

Family functioning is widely used as an evaluation criteria for parents, caregivers, and families. <sup>14</sup> A variety of measures are available to assess functioning in families challenged by negative events and to evaluate family factors useful for identifying families most at risk for poor family functioning. It is important to properly assess family functioning for

From the <sup>1</sup>European Paediatric Association/Union of National European Paediatric Societies and Associations, Berlin, Germany; <sup>2</sup>Italian Society of Pediatrics, Rome, Italy; <sup>3</sup>Division of Pediatrics, University Campus BioMedico, Rome, Italy; <sup>4</sup>Division of Pediatrics, Medical School of Split, University Hospital of Split, Split, Croatia; <sup>5</sup>Department of Biomedical Sciences, University of Foggia, Foggia, Italy; <sup>5</sup>Division of Pediatrics, Medical Faculty, University of Istanbul, Istanbul University Cerrahpaşa, Istanbul, Turkey; <sup>7</sup>Division of Pediatrics, University of Medicine and Pharmacy Iuliu Haţieganu, Cluj-Napoca, Romania; <sup>8</sup>Russian Academy of Pediatrics, Moscow, Russia; <sup>9</sup>Department of Pediatrics, Mayanei Hayeshuah Medical Center, Bnei Brak, Israel; and <sup>10</sup>Department of Pediatrics, Scientific Institute "Casa Sollievo della Sofferenza", Foggia, Italy

The authors declare no conflicts of interest.

0022-3476/\$ - see front matter. © 2021 Elsevier Inc. All rights reserved. https://doi.org/10.1016/j.jpeds.2021.06.082

caregivers to provide informed support, tailor interventions, evaluate outcomes for individuals and the entire family, <sup>14,15</sup> and ultimately develop programs and interventions that aim to improve family relationships and the overall family functioning. Five major theoretical models commonly used to assess family functioning are reported in **Table** (available at www.jpeds.com), which can be suitably selected and adopted as an assessment tool depending on the family context in which they are used.

# **Effects of COVID-19 Pandemic on Family Functioning**

A variety of natural, economic, and public health crisis have affected families throughout the world, causing distress to family members, including mental health problems, interparental conflict, and relational instability, generating an increase in rough and abusive parenting. 16,17 During the COVID-19 pandemic, families have suffered severe financial and psychological hardships, which were particularly problematic in complex sociopolitical contexts<sup>18</sup> characterized by important socioeconomic diversities, such as in Europe, making it difficult to establish coherent and consistent decision processes. In addition to the usual consequences of a public health crisis, including job instability and financial disruptions, families have experienced stress caused by social isolation, confinement within the household, rupture in the nature of school settings, concern for the future, and the need to make unprecedented health-related decisions for family members in a context of uncertainty.<sup>19</sup>

Understanding the influence of the pandemic on family functioning is therefore essential to plan effective support interventions and preventive measures and allocate adequate resources to properly assist families during and after the pandemic. Recent studies in Europe and the US have provided evidence of a significant increase in overall mental distress in people tested before and during the pandemic<sup>20</sup> and have shown a consistent deterioration in parent and child mental and behavioral health during the first months of the pandemic.<sup>21,22</sup> In particular, increases in parent depression and children's internalizing and externalizing problems from before the pandemic were significant findings that normally are observed only infrequently in developmental and family studies.<sup>21,22</sup> During the pandemic, these

2 factors increased by 2-fold and were more likely to score in the clinical range. <sup>21</sup>

Preliminary reports on the social consequences of COVID-19 suggest that mental health problems and family conflicts generated by the pandemic may negatively impact family functioning, including the ability to develop resilience.<sup>7,8</sup> The ongoing COVID-19 pandemic offers an important opportunity to further investigate the implications of deterioration in parent and child psychological well-being during extraordinary public health events. They may in fact amplify intrafamily conflicts and compromise the capability of parents to implement and sustain protective health behaviors of family members, including social distancing, handwashing, mask-wearing, and preventive plans recommended by public health authorities.<sup>23</sup> Assessment of family functioning during a pandemic, as in the case of COVID-19, is important to maintain an adequate dynamic and quality of family members' relationships.

#### **Conclusions**

It is currently unclear whether and to what extent family instabilities due to the COVID-19 pandemic may recover during the months following the end of this public health emergency, and for how long the negative effects of this event will persist and affect parent and child well-being. However, experience from past crises suggests the strategic importance of establishing or potentiating preventive measures based on the promotion of individual and family resilience before a crisis<sup>8,17</sup> and to plan for providing support to families after the onset of a crisis.<sup>24</sup> Family support plans should include the promotion of coping skills, family relationship quality, and attitude management. 25 Assisting families in recovering from pandemic periods and from crises in general requires a multidimensional and interdisciplinary approach including schools, pediatricians, social work professionals, mental health clinicians, counselors, family service agencies, and sport organizations. <sup>26,27</sup> ■

Reprint requests: Massimo Pettoello-Mantovani, MD, PhD, Department of Pediatrics, Scientific Institute "Casa Sollievo della Sofferenza", University of Foggia, Foggia, Italy. E-mail: mpm@unifg.it

References available at www.jpeds.com

℩

ш

#### References

Ш

- ProMED International Society for Infectious Diseases. Undiagnosed pneumonia—China (Hubei): Request for information. ProMED. 2019. Accessed June 3, 2021. https://promedmail.org/promed-post/?id=6864153
- 2. Bloom JD, Chan YA, Baric RS, Bjorkman PJ, Cobey S, Deverman BE, et al. Investigate the origins of COVID-19. Science 2021;372:694.
- World Health Organization. Coronavirus disease (COVID-19) outbreak. Accessed June 3, 2021. www.who.int/emergencies/diseases/ novel-coronavirus-2019/events-as-they-happen
- 4. Alzueta E, Perrin P, Baker FC, Caffarra S, Ramos-Usuga D, Yuksel D, et al. How the COVID-19 pandemic has changed our lives: a study of psychological correlates across 59 countries. J Clin Psychol 2020;77: 556-70
- Jenco M. American Academy of Pediatrics (AAP) News. Study: COVID-19 pandemic exacerbated hardships for low-income, minority families. Accessed June 3, 2021. https://www.aappublications.org/news/2020/06/ 03/covid19hardships060320
- Karpman M, Gonzalez D, Kenney GM. Urban Institute. Parents are struggling to provide for their families during the pandemic. Accessed June 3, 2021. https://www.urban.org/sites/default/files/publication/ 102254/parents-are-struggling-to-provide-for-their-families-during-thepandemic 2.pdf
- Killgore WDS, Taylor EC, Cloonan SA, Dailey NS. Psychological resilience during the COVID-19 lockdown. Psychiatry Res 2020;291:113216.
- 8. Pettoello-Mantovani M, Pop TL, Mestrovic J, Ferrara P, Giardino I, Carrasco-Sanz A, et al. Fostering resilience in children: the essential role of healthcare professionals and families. J Pediatr 2019;205:298-9.e1.
- Song JY, Peck KR, Korean Society of Infectious Diseases. A debate on public health responses to COVID-19: focused protection versus sustained suppression. J Korean Med Sci 2020;35:e433.
- Lunkenheimer ES, Olson SL, Hollenstein T, Sameroff AJ, Winter C. Dyadic flexibility and positive affect in parent–child coregulation and the development of child behavior problems. Dev Psychopathol 2011;23:577-91.
- Palermo TM, Chambers CT. Parent and family factors in pediatric chronic pain and disability: an integrative approach. Pain 2005;119:1-4.
- Lewandowski AS, Palermo TM, Stinson J, Handley S, Chambers CT. Systematic review of family functioning in families of children and adolescents with chronic pain. J Pain 2010;11:1027-38.
- Fomby P, Cherlin AJ. Family instability and child well-being. Am Sociol Rev 2007;72:181-204.

- Beardslee WR, Gladstone TRG, Wright EJ, Cooper AB. A family-based approach to the prevention of depressive symptoms in children at risk: evidence of parental and child change. Pediatrics 2003;112:e119-31.
- Beardslee WR, Hoke L, Wheelock I, Rothberg PC, van de Velde P, Swatling S. Initial findings on preventive intervention for families with parental affective disorders. Am J Psychiatry 1992;149:1335-40.
- Pettoello-Mantovani M, Namazova-Baranova L, Ehrich J. Integrating and rationalizing public healthcare services as a source of cost containment in times of economic crises. Ital J Pediatr 2016;42:18.
- 17. Hoey H, Mestrovic J, Vural M, Baranova LN, Somekh E, Pettoello-Mantovani M. Children facing natural, economic and public health crisis in Europe: the risks of a predictable unpredictability. Turk Pediatri Ars 2020;55(Suppl 1):4-9.
- 18. McIntosh ED, Janda J, Ehrich JH, Pettoello-Mantovani M, Somekh E. Vaccine hesitancy and refusal. J Pediatr 2016;175:248-9.e1.
- Ferrara P, Corsello G, Ianniello F, Sbordone A, Ehrich J, Giardino I, et al. Internet addiction: starting the debate on health and well-being of children overexposed to digital media. J Pediatr 2017;191:280-1.e1.
- Pierce M, Hope H, Ford T, Hatch S, Hotopf M, John A, et al. Mental health before and during the COVID-19 pandemic: a longitudinal probability sample survey of the UK population. Lancet Psychiatry 2020;7:883-92.
- Feinberg ME, Mogle JA, Lee JK, Tornello SL, Hostetler ML, Cifelli JA, et al. Impact of the COVID-19 pandemic on parent, child, and family functioning. Fam Process 2021 https://doi.org/10.1111/famp.12649
- **22.** Jiao WY, Wang LN, Liu J, Fang SF, Jiao FY, Pettoello-Mantovani M, et al. Behavioral and emotional disorders in children during the COVID-19 epidemic. J Pediatr 2020;221:264-6.e1.
- 23. Williams J, Namazova-Baranova L, Weber M, Vural M, Mestrovic J, Carrasco-Sanz A, et al. The importance of continuing breastfeeding during Coronavirus disease-2019: in support of the World Health Organization Statement on Breastfeeding during the Pandemic. J Pediatr 2020;223:234-6.
- **24.** Ferrara P, Guadagno C, Sbordone A, Amato M, Spina G, Perrone G, et al. Child abuse and neglect and its psycho-physical and social consequences: a review of the literature. Curr Pediatr Rev 2016;12:301-10.
- **25.** Ferrara P, Caporale O, Cutrona C, Sbordone A, Amato M, Spina G, et al. Femicide and murdered women's children: which future for these children orphans of a living parent? Ital J Pediatr 2015;41:68.
- Massachusetts Department of Mental Health. Chapter 171: report and annual individual and family support plan. Accessed June 28, 2021. https://archives.lib.state.ma.us/handle/2452/839255
- 27. Bennet T. Developing individualized family support plans. Northampton, MA: Brookline Books/Lumen Editions; 1999.

323.e1 Ferrara et al

#### Table. Five major theoretical models of family functioning

Stress and Coping Theory

Developed in the 1960s, this model is based on the notion that person and environment are in a dynamic, mutually reciprocal, and bidirectional relationship. Key elements are:

- a. Stress, defined as the relationship between the person and the environment that is appraised by individuals as exhausting, draining, or exceeding personal resources and as compromising their well-being
- b. Coping, identified as the thoughts and acts used by people to manage the demands of stressful circumstances.

The functioning of individuals is indissolubly related to their life context factors, and family functioning is viewed as the family's ability to adapt to stress and reduce the family and its members' overall vulnerability and susceptibility to stress.

#### Beavers System Model

Developed over the past 30-year period, this model is based on clinical observations of both dysfunctional and healthy families involved in treatment and research programs. Families are typified using 2 dimensions:

- a. Family competence: indicates the structure of the family, available information, and flexibility of the group to adapt to new circumstances. The ability of a family system to negotiate, function and deal effectively with stressful situations is directly related to its capability to intercept and use energy from the outside world to assist in maintaining its structure and flexibility.
- b. Family style: indicates the quality and style of family interaction and evaluate whether the families acquire most of their satisfaction by a centripetal way, from within the family, or, in a centrifugal way, from the outside world. According to these dimensions, family health is related to a curvilinear relationship, with optimal families falling in the middle of the continuum, experiencing satisfaction from both within the family and the outside world. In contrast, dysfunctional families are associated with both centripetal and centrifugal ends of the continuum. In this model, families are rated in these dimensions based on the structure and flexibility they display in such areas as autonomy, power, parental coalitions, family mythology, goal-directed behaviors, social intermediation ability, and family affect.

#### Circumplex Model of Family Functioning

Developed over the past 30 years, this model is based on clinical and research work with families and marital couples. Families are typified using 3 dimensions:

- a. Cohesion, defined as the emotional bonding that family members have toward one another. It encompasses the factors of emotional bonding, family boundaries, coalitions, time, space, friends, decision making, interests, and recreation.
- b. Flexibility: includes the quality and expression of leadership and organization, role relationships, and relationship rules and negotiations.
- c. Communication: indicates the positive communication skills utilized within a couple or a family system. It is considered a factor able to facilitate a positive modulation within the primary dimensions of cohesion and flexibility.

In a system of curvilinear continuum, optimal functioning is considered to be characterized by a balanced level of cohesion and flexibility, and is expected to fall in the middle of each continuum and dysfunction at the end of each continuum.

#### McMaster Model of Family Functioning (MMFF)

Thus systems-based model regards the family as an open system, characterized by a complex interaction between intrafamily subsystems, such as individual, marital and dyad, and the various external systems, such as extended family, schools, religion, or work. Instead of characterizing families through single dimensions, this model takes a whole-systems approach by evaluating the complex of family structure, organization, and transactional patterns. The assessment of family health or dysfunction is based on the ongoing articulated interplay between the individual relationships and the family system.

The approach to family functioning using this model implies the following guiding principles: parts of the family are related to each other; one part of the family cannot be understood in isolation from the rest of the system; family functioning is more than just the sum of its parts; a family's structure and organization are important in determining the behavior of family members; and transactional patterns of the family system are involved in shaping the behavior of family members. Family functioning is related to the accomplishment of essential functions and tasks grouped in 3 areas:

- a. Basic tasks
- b. Developmental tasks
- c. Hazardous tasks.

This model identifies 6 core areas that impact a family's ability to meet these functions and tasks: problem solving, communication, roles, affective responsiveness, affective involvement, and behavioral control.

#### Process Model of Family Functioning

This systems-based model investigates family functioning in the context of the ability of a family and its members to accomplish a multiplicity of tasks. The model distinguishes 7 basic dimensions to evaluate how successful a family is in confronting basic developmental and crisis tasks that can be recognized as central objectives to family life: task accomplishment, role performance, communication, affective expression, involvement, control, values, and norms.

The Process Model recognizes the importance of the larger social system and family history, as well as the intrapsychic interpersonal factors typical of the McMaster Model of Family Functioning. However, beyond these important factors of family system, the Process Model emphasizes the existence of a variety of additional influential factors. This model may be regarded not as a model of family therapy, but rather as a model for understanding families.





