Parental Mediation of COVID-19 News and Children's Emotion Regulation during Lockdown

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Abstract

The COVID-19 outbreak resulted in a large amount of emotionally charged messaging that is believed to have a tremendous psychological impact, particularly on children and early adolescents. The present study examined the relationships between children's exposure to COVID-19 news, children's emotional responses to the news, parental styles of mediating COVID-19 news, and children's emotional functioning during the COVID-19 lockdown in Italy in April 2020. An online survey was completed by 277 parents ($M_{age} = 43.36$; $SD_{age} = 4.76$; mothers = 89.5%) with children aged 6 to 13 years. Regression analyses showed that the parental active mediation style was associated with higher emotion regulation and lower lability/negativity, whereas the restrictive style was associated with higher lability/negativity and the social covieing style was associated with lower emotion regulation. The results provide evidence for how adults using an active style can mediate messages to reduce children's emotional difficulties during events with high emotional involvement.

Keywords COVID-19 · Parental mediation · Emotion regulation · Children · News exposure

Highlights

- Exposure to COVID-19 news can have a negative psychological effect on children if it is not adequately mediated by parents.
- Parental active mediation of COVID-19 news is related to children's higher emotion regulation and lower lability/negativity.
- Parental restrictive mediation of COVID-19 news is related to children's higher lability/negativity.
- Parental social covieing mediation of COVID-19 news is related to children's lower emotion regulation.

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The COVID-19 outbreak led to a significant increase in media use and digital communication as a means of obtaining information about the pandemic, as a means of maintaining social interactions during times of physical distance and isolation, and as an indispensable tool for many people to continue working and studying. However, these positive functions of the media during the pandemic COVID-19 do not preclude the possibility of negative psychological consequences. Negative aspects are mainly related to the so-called “infodemic”, i.e., an overabundance of information on COVID-19, which often includes misinformation and can have a detrimental effect on the physical and mental health of individuals (WHO, 2020; Zhong et al., 2021). Exposure to large amounts of emotionally charged COVID-19 messages affects all people, and the effects on children in particular remain largely unexplored.

For these reasons, the present study focused on the role of parents in mediating COVID-19 information to which their children are exposed. In particular, it examined how parental mediation styles are related to children's and early adolescents' emotion regulation during the April 2020 lockdown in Italy.

The Impact of the COVID-19 Lockdown on Parents and Children

Italy was the first European country to face an outbreak of the COVID-19 pandemic in early 2020. Due to the rapid spread of infection and rapidly increasing mortality rates, the Italian government imposed a strict national lockdown from March 9 to May 4. People were imposed a home confinement, all non-essential activities were stopped, movement was allowed only for necessities, and most people began working from home. Schools and universities were closed, and students were switched from face-to-face to distance learning by the end of the school year (June 2020). This sudden disruption of daily routines had a tremendous impact on families. Children, in particular, had to give up school activities, sports, relational contacts, and friendships, and parents had to juggle working at home and helping children learn away from home. For some families, the situation was aggravated by the burden of economic worries (wage cuts or job loss) and by concern for sick or deceased relatives (Bonacini et al., 2021).

There is increasing recognition in the literature of the negative psychological effects of COVID-19 and associated containment measures (for reviews see Brooks et al., 2020; Trumello et al., 2020), although few studies have specifically addressed the detrimental effects on the mental health of parents and children. Some studies have shown that the pandemic and its correlates (health and financial concerns, as well as the burden of caring for children and home-schooling) led to an increase in parental stress, which in turn negatively affected the quality of family relationships (Davis et al., 2021; Prime et al., 2020; Russell et al., 2020). Some authors spoke of parental exhaustion caused by high stress levels during the lockdown period (Marchetti et al., 2020). Parental stress had a negative impact on children's well-being, and children's stress was mainly manifested by sleep disturbances, behavioral problems, increasing internalizing symptoms, and difficulties in emotion regulation (Babore et al., 2019, 2021; Crescentini et al., 2020; Di Giorgio et al., 2020; Jiao et al., 2020; Spinelli et al., 2020; Spinelli et al., 2020). Previous work has found that parental stress is indirectly related to children's emotion regulation via parental self-efficacy beliefs (Morelli et al., 2020, 2021). These findings suggest that parental beliefs about being able to competently manage parenting tasks during the

unexpected and emotionally stressful situation of confinement may have a protective role in children's emotional well-being. Based on these findings, in the present study we specifically examined how the different styles parents have in mediating COVID-19 information may influence children's emotional regulation.

Exposure to COVID-19 News and Parental Mediation

As noted earlier, COVID-19 is the first pandemic in history in which technology and social media are widely used by people of different ages and for different purposes (WHO, 2020). The daily presence of COVID-19 news in all media is likely to have a huge psychological impact, especially on children. At preschool age, children's interest in television and digital media increases significantly, and children are exposed daily to a rapid succession of images and sounds on the screen that evoke a variety of emotions (Calvert & Wilson, 2008; Fremont et al., 2005). This information overload can be passively experienced by children without the presence of an adult. In the specific case of COVID-19 information, children are exposed to threatening content and images of suffering that evoke worry, fear of death, and sadness (Gil-Rivas et al., 2007; Pfefferbaum et al., 2001; Remmerswaal & Muris, 2011; van der Molen & Bushman, 2008). Specifically, children may experience emotional contagion if the content is not appropriately mediated and cognitively processed by an adult (Cattellino et al., 2003; Monteiro et al., 2021). Therefore, exposure to COVID-19 news, especially through the widespread use of the Internet, may be considered a factor contributing to difficulties in emotion regulation in children during the pandemic. To our knowledge, few studies have examined media use in the family context during the COVID-19 pandemic. In particular, existing studies have focused on media use among adolescents and their parents, and on the relationships between anxiety and increased media use at the onset of COVID-19 spread (Akgül & Atalan Ergin, 2021; Drouin et al., 2020).

In the present study, we focused specifically on children and early adolescents (ages 6–13) and on the construct of parental mediation, defined as the various strategies and practices parents use to manage and regulate their children's media use. Through parental mediation, parents help their children interpret media content to reduce its potential negative effects and promote its positive effects (Nathanson, 2001; Valkenburg et al., 1999). Parental mediation can be considered as a domain-specific aspect of parenting style (Livingstone et al., 2015). The first studies on parental mediation referred to television and distinguished three types of parental mediation: active or instructive, restrictive, and co-viewing (Valkenburg et al., 1999). Active mediation is characterized by parents openly communicating with their

children about positive and negative aspects of television content. Restrictive mediation involves setting rules for television use, both in terms of frequency and allowed content. Co-viewing refers to sharing television with children without necessarily discussing the content. The same categories of parental mediation were applied to video game use and then to Internet and social media use (Brito et al., 2017; Clark, 2011; Nikken & Jansz, 2014; Rodríguez-de-Dios et al., 2018). In principle, the three categories seem to apply to the use of the Internet as well, although it has different characteristics than television, such as wider distribution and easier access, and a greater private dimension to its use (Coyne et al., 2017; Jiow et al., 2017; Valkenburg et al., 2013). Overall, parents can talk to their children about Internet content and give them advice (active mediation) and set rules for Internet use (restrictive mediation), although sharing digital media (co-viewing) is less common and feasible. Nevertheless, especially for younger children using digital devices, active mediation and sharing can be combined by parents sitting nearby while the child is online and actively sharing and discussing the experience (Livingstone et al., 2015). In general, parental mediation decreases as children grow and enter adolescence, paralleling a parenting style that gradually allows more room for autonomy (Chen & Chng, 2016). In particular, restrictive mediation is more common among parents of younger children, whereas parents of adolescents tend to reduce restrictive practices that adolescents may perceive as invasive (Padilla-Walker et al., 2012; Valkenburg et al., 1999). Nevertheless, the studies suggest that parents need to be able to modulate their mediation style by combining communication and rules as their children enter adolescence and learn to use digital media with greater autonomy and competence (Symons et al., 2017).

The Effects of Parental Mediation on Children's Psychological Adjustment

Parents can mediate both traditional media (e.g., television) and new media (e.g., the Internet) and thus have an impact on children's media use, both in terms of frequency and content, as well as on their attitudes toward media and some related consequences for their psychological adjustment (e.g., aggressive behavior associated with aggressive media content) (Nathanson, 2001).

The literature has found a generally positive effect of active mediation on children's outcomes. Specifically, active mediation promotes a better understanding of media content, the development of critical attitudes toward it, and reduces fear reactions when children are exposed to frightening content, as well as the likelihood of transferring undesirable behaviors to real life (Collier et al., 2016; Nathanson, 2001). In addition, active mediation enhances children's digital skills (Rodríguez-

de-Dios et al., 2018) and reduces exposure to risky content (Fikkers et al., 2017) and addictive use of the Internet (Fu et al., 2020). Restrictive mediation is generally associated with lower media use and exposure to risky content, but also affects children's online skills and may have a "boomerang effect" leading to more rule breaking as children grow up (Duerager & Livingstone, 2012). Evidence on the role of social co-viewing is less consistent and seems to depend largely on the content that is shared (Nathanson, 2001).

The literature on the role of parental mediation on children's emotions and internalizing problems has focused mainly on media reports of aggression and violent events (e.g., murders or terrorist attacks). Children's exposure to news about violent events has been shown to be related to feelings of fear, sadness, and anger, and this relationship is weaker when parents use active mediation and help children understand the news than when they use restrictive mediation (Buijzen et al., 2007). Similarly, research on the effects of the September 11, 2001 terrorist attack on children and adolescents showed that active mediation of television news by parents was associated with a reduction in their stress response (Gil-Rivas et al., 2007; Phillips et al., 2004). Little is known about the role of parents in mediating media information and images in the context of a threatening situation, such as a pandemic. A study conducted in 2009 Swine Flu showed that the way parents convey threatening information plays a central role in children's fear response (Remmerswaal & Muris, 2011). Therefore, parental mediation is also believed to play a central role in this unprecedented situation related to the COVID-19 pandemic, characterized by a wide dissemination of threatening media messages reaching all family members.

Study Aims

Although there are no specific theories on parental mediation styles, as suggested by Collier et al. (2016), studies on parental mediation are mainly based on family and developmental theories. As these authors reported in their meta-analysis, several parenting strategies, such as monitoring, can protect children and adolescents from involvement in risky behaviors and from emotional distress. More recently, Beyens and colleagues (2019) introduced a new theory, the developmental parental mediation theory. According to this theoretical perspective, parenting behaviors are conceived as responses to the child that are more effective when are modified in relation to child's developmental needs, as it is stated by developmental theories (Belsky, 1984) and family development theory (Rodgers & White, 1993).

Based on these considerations, the present study had the following aims:

1. To describe children's exposure to news about COVID-19 as perceived by parents, examining also gender and

age differences in children's exposure to news related to COVID-19, children's emotional reactions to news related to COVID-19, children's emotion regulation.

2. To describe parental mediation of news related to COVID-19 (active, restrictive, and social coviewing), examining child age and gender differences.
3. To examine the role of parental mediation style (active, restrictive, and social coviewing) on children's emotion regulation.

As mentioned earlier, with regard to the first and second aims, our study was exploratory in nature and we had no specific hypotheses. Regarding the third aim, on the other hand, it was expected that the active mediation style would be positively related to children's emotion regulation, since previous studies have shown that the active style is related to better psychological adjustment in children (Collier et al., 2016; Nathanson, 2001; Valkenburg et al., 1999) and to a more adaptive emotional response when children are exposed to threatening messages (Buijzen et al., 2007; Gil-Rivas et al., 2007). As for the restrictive and social coviewing styles, there are inconsistent results in the literature regarding the relationships between these styles and children's outcomes (Collier et al., 2016). Following Livingstone et al. (2015), we expected that a restrictive mediation style might be associated with higher child lability/negativity. Indeed, a restrictive style was found to be associated with lower risk exposure, but restrictions also “limit children's online opportunities to learn, explore, develop digital skills, or gain resilience to risk” (Livingstone et al., 2015, p. 9). In relation to social coviewing, and building on the findings of a meta-analysis (Collier et al., 2016) that demonstrated how social coviewing is associated with high risk of negative outcomes in children (such as aggression, poor academic performance, attention problems), we hypothesized that this parental style may be negatively associated with emotion regulation in children.

Method

Participants and Procedure

Data of the present study was collected in Italy in April 2020, during the national lockdown due to the spread of the COVID-19 pandemic. The Italians had been in lockdown for 1 month when the data was collected. A link to an online survey was sent to several parents that were in turn asked to share it among their contacts and on their social networks. An inclusion criterion of the study was being parents with children between 6 and 13 years of age. Of the 417 parents who had access to the link of the survey, a total of 277 parents completed the survey ($M_{age} = 43.36$; $SD_{age} = 4.76$; age range = 30–58; mothers = 89.5%; fathers = 10.5%). Thus,

Table 1 Descriptive statistics of participants ($N = 277$)

Characteristics	Participants, No. (%)
SES	
<i>Low</i>	22 (8)
<i>Medium</i>	212 (76.5)
<i>High</i>	43 (15.5)
Living in a red zone	
<i>No (Center or Southern Italy)</i>	105 (37.9)
<i>Yes (Northern Italy)</i>	172 (62.1)
Being a COVID-19 Frontline Healthcare Professional	
<i>No</i>	261 (94.2)
<i>Yes</i>	16 (5.8)
Parents' Work status during lockdown	
<i>Work as before lockdown/smart-working</i>	162 (58.5)
<i>Temporary suspension</i>	72 (26.0)
<i>Layoffs/unemployment</i>	43 (15.5)
Having relatives or loved ones tested positive to COVID-19	
<i>No</i>	254 (91.7)
<i>Yes</i>	23 (8.3)
Having acquaintances tested positive to COVID-19	
<i>No</i>	90 (32.5)
<i>Yes</i>	187 (67.5)

SES Socio-Economic Status

the response rate was 66.4%. Regarding family status, 83% ($n = 230$) of parents were married or lived with a partner, 14.4% ($n = 40$) were divorced or separated, 0.4% ($n = 1$) was a widow, and 2.2% ($n = 6$) were single parents. In Table 1 are reported further descriptive characteristics of participants related to socio-economic status, living in a red zone (i.e., a high-risk zone for contagion that in Italy was the Northern Italy at the beginning of the pandemic), being a frontline healthcare professional, work occupation, and having relatives, loved ones or acquaintances tested positive to the COVID-19. Regarding children, they were aged between 6 and 13 ($M_{age} = 9.66$, $SD = 2.29$; girls = 52% and boys = 48%). The study was conducted in accordance with the ethical principles of the Declaration of Helsinki. Parents gave their consents to participate on the first page of the online survey by clicking the button “Yes, I accept to participate to this study”. This study was approved by the Ethics Committee of Sapienza University of Rome, Department of Developmental and Social Psychology, protocol number: 427, April 16, 2020.

Measures

Demographic variables

Parents were asked to report their own and their children's age and gender.

Family Risk Index (FRI)

Following the same procedure of previous studies (Morelli et al., 2020; Spinelli et al., 2020), a family risk index (FRI) was created. The FRI measured familiar risks related to the family situation during the lockdown due to the COVID-19 pandemic. The FRI is a composite index that was calculated attributing one point to each of the following familiar risk factors: (1) being a single parent or being separated/divorced; (2) living alone with children or with a partner and children; (3) having a low socio-economic status; and (4) having had a worsening of the work situation.

COVID-19 Risk Index (CRI)

Again, following the same procedure used by Morelli et al. (2020) and Spinelli et al. (2020), a COVID-19 risk index (CRI) was created. Specifically, the CRI evaluated the risks related to the COVID-19 pandemic. Like the FRI, the CRI was a composite index that was calculated attributing one point to each of the following COVID-19 risk factors: (1) living in a red zone (i.e., a high risk zone for contagion that in Italy was Northern Italy versus Central and Southern Italy); (2) having relatives or loved ones tested positive to the COVID-19; (3) having friends or acquaintances tested positive to the COVID-19; (4) having hospitalized relatives due to the COVID-19 (5) being a health worker; and (6) being a health worker who worked in a COVID-hospital with patient hospitalized due to the pandemic. Both the CRI and the FRI were summative rating scales created ad hoc for the present study. The CRI ranged from 0 to 4 and FRI from 0 to 6.

Children's exposure to news related to COVID-19

Parents were asked to report how much time per day during the last week their children watched television news, read news on the web about the COVID-19 pandemic, and searched for information online about the COVID-19 pandemic. Parents rated each of the three items on a seven-point Likert scale ranging from 1 (*0 h per day*) to 7 (*6 or more hours per day*). Since the scores were not normally distributed, the items were dichotomized (0 = *never*; 1 = *at least one hour per day*). A summative rating index was created by summing the responses to each item, ranging from 0 to 3. A sample item is "Thinking about the last week, how much time on average per day has he/she read news on the web about the COVID-19 pandemic?"

Children's emotional reactions to news related to COVID-19

Parents reported about their children's emotional reactions to exposure to COVID-19 news on a 7 point-Likert scale from 1 (*Not at all*) to 7 (*Very much*). Parents were asked to

answer two items, previously used by Morelli et al. (2021), that evaluated children's worry/scare and sadness/depression, respectively, due to the exposure to COVID-19 news. The items were "When your child heard news about the COVID-19, how worried or scared did she/he feel about the COVID-19 news?" and "When your child heard news about the COVID-19, how sad and depressed did she/he feel about the COVID-19 news?"

Parental mediation of news related to COVID-19

A modified version of the Television Mediation Scale (Valkenburg et al., 1999) was used to assess three different styles of parental mediation of children's exposure to news related to the COVID-19 pandemic. The original scale was composed of 15 items that evaluated the following three parental mediation styles: restrictive mediation, active mediation, and social coviewing. So as to assess the parental mediation styles towards children's exposure to the COVID-19 news, the items were reworded in order to be focused on tv contents related to the COVID-19. A sample item for restrictive mediation style is "How often did you say your child to switch off TV as soon as there were news about the COVID-19 pandemic?", a sample item for active mediation style is "How often did you help your child to understand information related to the COVID-19 pandemic that he/she watches on TV or read on the Internet?" and a sample item for social coviewing mediation style is "How often did you watch with your child TV programs in which information about the COVID-19 are provided?" Each item was rated on a 4 point-Likert scale from 1 (*Never*) to 4 (*Often*). The administered scale was composed of 12 items. Preliminary analyses showed that, in order to improve reliabilities of each subscale, an item had to be removed from the active mediation subscale and another one from the social coviewing subscale. Thus, the final scale was composed of 10 items and the three final subscales showed acceptable reliabilities: specifically, restrictive mediation (4 items; Cronbach's alpha of 0.71), active mediation (3 items; Cronbach's alpha of 0.72), and social coviewing mediation (3 items; Cronbach's alpha of 0.56). The total score of restrictive mediation scale ranged from 4 to 16, the total score of active mediation score and of social coviewing mediation scale ranged from 3 to 12.

Children's emotion regulation

A short version of the Emotion Regulation Checklist (Molina et al., 2014) was administered to parents. This 10-item scale, previously used in Morelli et al. (2020, 2021), assessed emotional regulation (i.e., the ability to express their positive and negative emotions) and lability/negativity (i.e., the presence of excessive exuberance, disruptive

Table 2 Mean and standard deviations of investigated variables by child's age and gender

	Child			
	Children (7–10 years) M (SD)	Early Adolescents (11–13 years) M (SD)	Girls M (SD)	Boys M (SD)
Child worried/scared for COVID news	3.27 (1.39)	3.13 (1.47)	3.28 (1.50)	3.14 (1.33)
Child sad/depressed for COVID news	2.68 (1.47)	2.67 (1.49)	2.83 (1.55)	2.52 (1.37)
Child's Exposure to COVID News	0.59 (0.71)*	1.03 (0.84)*	0.77 (0.79)	0.77 (0.80)
Child's Emotion Regulation	3.34 (0.44)*	3.21 (0.51)*	3.29 (0.48)	3.29 (0.48)
Child's Lability/Negativity	1.75 (0.60)	1.75 (0.56)	1.70 (0.57)	1.80 (0.60)
Social_PMS	5.76 (2.04)*	6.96 (2.01)*	6.04 (1.98)	6.46 (2.22)
Active_PMS	9.82 (2.10)	10.17 (2.07)	9.88 (2.11)	10.06 (2.08)
Restrictive_PMS	9.96 (3.29)*	7.91 (2.66)*	8.89 (3.06)	9.39 (3.36)
<i>N</i>	165	112	144	133

PMS Parental Mediation Style, *N* = 277**p* < 0.05

behaviors, and anger) of children during the lockdown related to the COVID-19 pandemic. Each item was rated on a 4 point-Likert scale from 1 (*Almost never*) to 4 (*Almost always*). Parents were asked to answer focusing on the period of lockdown linked to the COVID-19 health emergency. A sample item of emotion regulation scale is “How much your child can tell if she/he is feeling sad, angry, afraid or scared?” and a sample item of lability/negativity scale is “how much your child tends to have destructive outbursts of energy and exuberance?”. Both the emotional regulation and the lability/negativity scales showed good reliabilities, respectively Cronbach's alpha of 0.65 and 0.78.

Data Analysis

Firstly, descriptive analyses were run in order to compute the frequencies of children's exposure to news related to COVID-19. Subsequently, a series of MANOVAs were run in order to compute children's gender and age differences in children's exposure to news related to the COVID-19 pandemic, in children's emotional reactions to news related to COVID-19, in children's emotion regulation, and in parental mediation styles of news related to the COVID-19 pandemic. In order to investigate differences related to children's age, children were divided in two age groups related to the school they were attending: children of primary school (6 to 10 years; *n* = 165; *M*_{age} = 8.05, *SD*_{age} = 1.37) and early adolescents of secondary school (11 to 13 years; *n* = 112; *M*_{age} = 12.04; *SD*_{age} = 0.81). Then, correlations among the investigated variables were run. Finally, two hierarchical linear regression analyses were run to determine which parental mediation style (i.e., restrictive, active, and social

coviewing) of news related to the COVID-19 pandemic was associated respectively with children's emotion regulation and with children's lability/negativity, controlling for the effect of children's age, gender, FRI, CRI, children's exposure, and children's emotional reactions to the news related to the COVID-19 pandemic. The assumptions of hierarchical multiple regression analyses were preliminarily verified by calculation the Variance Inflation Factors (VIF) for all the predictors to check for possible multicollinearity among the variables. All VIFs felt within acceptable ranges (1.01–1.68).

Results

Descriptive Analyses

As reported by parents, 48% of children (*n* = 133) watched television news at least once during the last week, 15.9% (*n* = 44) read news on the web about the COVID-19 pandemic at least once during the last week, and 13% (*n* = 36) searched for information online on the COVID-19 pandemic at least once during the last week.

Children's gender and age differences

A series of MANOVAs were run in order to compute children's gender and age differences in investigated variables (i.e., children's exposure to news related to COVID-19, children's emotional reactions to news related to COVID-19, children's emotion regulation, and parental mediation styles of news related to the COVID-19 pandemic. The significant multivariate effect of the first

Table 3 Correlations among variables

	1	2	3	4	5	6	7	8	9	10	11	12	<i>M</i>	<i>SD</i>
1. Child's Gender	1												–	–
2. Child's Age	−0.02	1											9.66	2.29
3. Child's Exposure to COVID News	0.00	0.26**	1										0.77	0.79
4. FRI	−0.08	0.10	0.03	1									0.69	0.96
5. CRI	0.01	0.01	0.02	0.01	1								1.62	1.04
6. Child worried/scared for COVID news	0.05	0.03	0.09	0.05	0.00	1							3.21	1.42
7. Child sad /depressed for COVID news	0.10	0.06	0.12*	0.09	0.06	0.61**	1						2.68	1.47
8. Social_PMS	−0.10	0.31**	0.47**	0.01	0.02	0.18**	0.11	1					6.24	2.11
9. Active_PMS	−0.04	0.13*	0.10	−0.06	0.07	0.27**	0.18**	0.38**	1				9.96	2.09
10. Restrictive_PMS	−0.08	−0.33**	−0.17**	−0.03	0.03	0.02	0.07	−0.24**	0.03	1			9.13	3.21
11. Child's Emotion Regulation	0.01	−0.11	−0.09	−0.08	−0.01	−0.10	−0.28**	−0.11	0.12	0.01	1		3.29	0.48
12. Child's Lability/Negativity	−0.08	−0.06	−0.02	0.14*	0.02	0.06	0.16**	0.02	−0.10	0.15*	−0.38**	1	1.75	0.59

Gender was coded as 0 = boys and 1 = girls

N = 277, *FRI* Family Risk Index, *CRI* COVID Risk Index, *PMS* Parental Mediation Style

***p* < 0.01; **p* < 0.05

MANOVA, Wilks's lambda = 0.92, $F(3, 273) = 7.617$, $p < 0.001$, indicated an overall effect of age on exposure and emotional reactions to news related to the COVID-19 pandemic. Specifically, the ANOVAs showed that early adolescents had higher mean scores than children in exposure to news related to the COVID-19, $F(1, 277) = 21.39$, $p < 0.001$. No age differences emerged in children's emotional reactions to news related to COVID-19 (see Table 2 for means and standard deviations). Conversely, no gender differences were found in exposure and emotional reactions to news related to the COVID-19 pandemic, Wilks's lambda = 0.99, $F(3, 273) = 1.032$, $p = 0.379$ (see Table 2 for means and standard deviations).

The significant multivariate effect of another MANOVA, Wilks's lambda = 0.98, $F(3, 274) = 3.34$, $p = 0.037$, found children's age differences in children's emotion regulation and lability/negativity during the lockdown. Specifically, the ANOVAs showed that children had higher mean scores than early adolescents in emotion regulation during the lockdown, $F(1, 277) = 5.56$, $p = 0.02$. No age differences emerged in lability/negativity during the lockdown (see Table 2 for means and standard deviations). Conversely, no gender differences were found in emotion regulation and lability/negativity during the lockdown, Wilks's lambda = 0.99, $F(3, 274) = 1.07$, $p = 0.344$ (see Table 2 for means and standard deviations).

Finally, the significant effect of another MANOVA showed the presence of children's age differences in parental mediation style of news related to the COVID-19 pandemic (i.e., restrictive style, active stile, social coviewing style), Wilks's

lambda = 0.86, $F(3, 273) = 15.25$, $p < 0.001$. Specifically, the ANOVAs showed that parents of children had higher mean scores in restrictive style than parents of early adolescents, $F(1, 277) = 30.17$, $p < 0.001$, and that parents of early adolescents had higher mean scores in social coviewing style than parents of children, $F(1, 277) = 23.31$, $p < 0.001$. No age differences emerged in active style (see Table 2 for means and standard deviations). Conversely, no children's gender differences were found in parental mediation style of news related to the COVID-19 pandemic (i.e., restrictive style, active stile, social coviewing style), Wilks's lambda = 0.98, $F(3, 273) = 1.91$, $p = 0.13$ (see Table 2 for means and standard deviations).

Correlations and Hierarchical Linear Regression Analyses

Correlations among the investigated variables are reported in Table 3. Specifically, children's age was positively related to children's exposure to COVID news, to social and active parental mediation style, and negatively related to the restrictive one. Children's exposure to COVID-19 news was positively and significantly related to children's sadness and depression due to exposure to COVID-19 news, to social parental mediation style, and negatively related to the restrictive one. The family risk index was positively and significantly related to children's lability/negativity. Moreover, children's worry and scare due to exposure to COVID-19 news was positively and significantly related to being sad and depressed due to exposure to COVID-19, and to social

Table 4 Hierarchical linear regressions (Step 2)

Predictors	Children's Emotion Regulation			
	Emotion Regulation		Lability/Negativity	
	R ²	Beta	R ²	Beta
Age		−0.08		−0.04
Gender		0.03		−0.08
Child's Exposure to COVID News		0.02		−0.05
FRI		−0.03		0.12*
CRI		0.01		0.09
Child worried/scared for COVID news		0.08		−0.03
Child sad/depressed for COVID news		−0.35***		0.10*
Social_PMS		−0.16*		0.14
Active_PMS		0.23***		−0.17*
Restrictive_PMS		−0.04		0.15*
	0.14**		0.09*	

Standardized regression coefficients are reported. Gender was coded as 0 = boys and 1 = girls

FRI Family Risk Index, CRI COVID Risk Index, PMS Parental Mediation Style

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

and active parental mediation style. Whereas children's sadness and depression due to exposure to COVID-19 news emerged to be positively and significantly related to active parental mediation style and children's lability/negativity, and negatively related to children's emotion regulation. Furthermore, the social parental mediation style was positively related to active and negatively related to restrictive parental mediation styles. Finally, children's lability/negativity was positively related to restrictive parental mediation style and negatively related to children's emotion regulation.

The first hierarchical linear regression analysis investigated which parental mediation style (i.e., restrictive, active, and social coviewing) of news related to the COVID-19 pandemic was associated with children's emotion regulation, controlling for the effect of children's age, gender, FRI, CRI, children's exposure, and children's emotional reactions to news related to the COVID-19 pandemic. Specifically, children's age, gender, FRI, CRI, children's exposure and children's emotional reaction were entered in the first step of the regression model and the three parental mediation style were added in the second step. Variables entered in the first step as covariates, accounted for 9.9% of the variance, $R = 0.31$, $p < 0.001$. Only children's emotional reactions to news related to COVID-19, specifically being sad and depressed emerged as significant predictor of children's emotion regulation. In the second step, in which the three parental mediation styles were added to the equation, 14.3% of the variance was accounted for, $R = 0.38$, with a

significant increment of 4.4% in the explained variance, $\Delta F(3, 266) = 4.56$, $p = 0.004$. Both social coviewing and active style turned out to be significant predictors of children's emotion regulation. Being depressed and sad after exposure to news related to the COVID-19 remained still a significant predictor. Full statistics of the final model (second step) are reported in Table 4.

The second hierarchical linear regression analysis investigated which parental mediation style (i.e., restrictive, active, and social coviewing) was associated with children's lability/negativity, controlling for the effect of children's age, gender, FRI, CRI, children's exposure and children's emotional reactions to news related to the COVID-19 pandemic. Following the same procedure of the first regression analysis, children's age, gender, FRI, CRI, children's exposure and children's emotional reaction were entered in the first step of the regression model and the three parental mediation style were added in the second step. Variables entered in the first step as covariates, accounted for 5.9% of the variance, $R = 0.24$, $p < 0.02$. Both FRI and children's emotional reaction to news related to COVID-19, specifically being sad and depressed emerged as significant predictors of children's lability/negativity. In the second step, in which the three parental mediation styles were added to the equation, 9.9% of the variance was accounted for, $R = 0.31$, with a significant increment of 3.9% in the explained variance, $\Delta F(3, 266) = 3.88$, $p = 0.01$. Both FRI, active and restrictive style turned out to be significant predictors of children's lability negativity. Again, being depressed and sad after exposure to news related to the COVID-19 pandemic remained still a significant predictor. Full statistics of the final model (second step) are reported in Table 4. Two further moderation regression analyses were computed for verifying the possible moderation effects of children's age in the relationship between each of the three parental mediation style and children's emotion regulation and lability/negativity, respectively (results of these moderation analyses are reported in the Footnote 1)¹.

Discussion

The present study investigated how parental mediation of COVID-19 news was related to emotion regulation in

¹ The interaction effects between each parental mediation style of news related to the COVID-19 pandemic and children's age on children's emotion regulation and children's lability negativity were also tested with two moderation regression analyses but no significant interaction effects were found. Specifically, neither age*social mediation style, $\beta = 0.05$, $p = 0.45$, nor age*active mediation style, $\beta = 0.06$, $p = 0.36$, nor age*restrictive mediation style, $\beta = 0.03$, $p = 0.61$, emerged to be significant predictors of children's emotion regulation. Again, neither age*social mediation style, $\beta = -0.04$, $p = 0.53$, nor age*active mediation style, $\beta = -0.002$, $p = 0.97$, nor age*restrictive mediation style, $\beta = 0.005$, $p = 0.93$, emerged to be significant predictors of children's lability/negativity.

children and early adolescents during the lockdown period in Italy in the first phase of the global pandemic (April 2020). The psychological effects of exposure to threatening COVID-19 news in children and adolescents remains largely unexplored. To our knowledge, this was the first study to focus on the role of different parental mediation styles (active, restrictive, and social coviewing) on children's emotion regulation during the COVID-19 pandemic.

Regarding the first aim, our results showed that children and early adolescents were exposed to more COVID-19 TV news than messages on the Internet and that overall exposure was greater among early adolescents than children, while no gender differences were observed. According to parents' perceptions, no children's gender or age differences were found in children reactions to news. Early adolescents reported lower emotion regulation than younger children, with no gender differences noted in children's emotion regulation and lability/negativity.

The results of our study showed that children and early adolescents were exposed to COVID-19 news mainly through television, a device used by all family members and at high risk of passive exposure. In addition, our results showed that exposure to news increases with age; in fact, early adolescents are more likely to access news on the Internet through digital devices that they use independently of their parents (Subrahmanyam et al., 2001).

Feelings of anxiety and sadness characterize both children and early adolescents, regardless of gender, a sign of the strong emotional impact that this unprecedented situation has on everyone. The children's sad reactions are probably related to the limitations they experienced, as they were unable to participate in normal life activities outside the home, i.e., school, peer groups, recreational activities, visits to grandparents. Emotion regulation was lower in early adolescents than in children: this might be related to the fact that younger children's emotions are still externally regulated by their parents, whereas boys and girls gradually learn to self-regulate their emotions with the transition to early adolescence (Cattellino et al., 2019; Calandri et al., 2021). Emotional instability is therefore a feature of early adolescence, and it is likely that the situation surrounding the pandemic and containment measures may exacerbate the critical situation at this age (Cattellino et al., 2021).

Regarding the second aim, descriptive results showed that restrictive mediation style was used to a greater extent by parents with younger children, social coviewing was more likely to be reported by parents of early adolescents, while active parental mediation style did not differ with respect to the age of the offspring. The greater use of a restrictive mediation style among younger children is consistent with the literature (Padilla-Walker et al., 2012; Valkenburg et al., 1999), and also seems to be confirmed in this particular situation related to the COVID-19 pandemic.

This style seems to better suit children's lower cognitive and personal maturity, which requires greater parental supervision and control over media use. It is possible that the children's parents mainly used a restrictive mediation style because they thought they were protecting their children from the emotional impact of the pandemic. The social mediation style was used most often with early adolescents, which may simply reflect the fact that early adolescents are generally more exposed to news. COVID-19 messages likely originated from TV and were viewed together as a family, but also from the Internet, as digital devices were widely used and shared by family members during this pandemic, and especially during lockdown periods, for work and study reasons and to maintain social contact. The literature on parental mediation reports conflicting findings about age differences in the use of social coviewing (Nathanson, 2001), and the topic deserves further investigation, especially in this unprecedented situation. Children's age differences in restrictive and social coviewing parental mediation style seemed to be in line with the developmental parental mediation theory, stating that parenting behaviors are more effective when are modified in relation to children's developmental needs (Beyens et al., 2019). The use of active parental mediation style did not differ between children and early adolescents, although we can imagine that this style is flexibly adapted by parents according to children's age, as also hypothesized in previous studies (Nathanson, 2001; Symons et al., 2017). Finally, parental mediation styles did not differ by offspring gender. Some studies have found gender differences in parental mediation in relation to specific issues, such as exposure to the risk of cyberbullying, highlighting that the association between restrictive mediation and cyber-victimization was more positive for girls than boys (Wright, 2017). Nonetheless, exposure to COVID-19 news is a more general situation whose implications reasonably transcend potential differences between boys and girls.

Regarding the third aim, lower emotion regulation was related to sadness for COVID-19 news and social coviewing, whereas higher emotion regulation was related to active mediation. Higher lability/negativity was related to socio-economically difficult family situations, sadness about COVID-19 news, and restrictive mediation, whereas lower lability/negativity was related to active mediation. First, these findings underscore that exposure to news per se is not related to children's and early adolescents' emotion regulation, but that their emotional experiences related to news and parental style of mediating news play an important role. In particular, sadness experienced as a result of exposure to COVID-19 news appears to be negatively related to children's overall emotion regulation. During the first lockdown in Italy (April 2020), there was a large spread of contagion and a high mortality rate, and the media repeatedly

disseminated very strong images that fueled feelings of sadness (in particular, the image of a long line of military trucks carrying coffins in a city in Northern Italy). It is possible that such images made a strong impression on children, even indirectly through the emotions they saw in their parents.

Beyond the role of children's emotional responses to news, the way parents mediate information is central to their children's emotion regulation. As expected, the active mediation style was associated with higher emotion regulation and lower child lability/negativity. In contrast, both the restrictive and social covieing mediation styles were negatively related to children's emotional functioning. Specifically, in the present study, the restrictive mediation style of COVID-19 messages did not appear to protect against children's lability/negativity. The literature has shown that this style is associated with lower exposure to messages (Duerager & Livingstone, 2012), but we found that exposure was not related to children's emotional difficulties. It is likely that parents conceal negative news to protect their children, but they may still indirectly perceive that something negative is happening, and their worry may increase. In addition, children may have other ways of accessing news without parental control, particularly through digital devices. Overall, our findings seem to confirm the evidence from the literature that a restrictive parenting style does not protect children from experiencing negative feelings when exposed to threatening messages (Buijzen et al., 2007). Even watching COVID-19 news together with parents does not seem to be sufficient to promote emotion regulation in children. Evidence on the importance of watching the news together for children's development is mixed and depends largely on the age of the children and the media content that children and parents share (Nathanson, 2001). Parents can watch TV or digital devices together with their children, but this sharing should be accompanied by dialogue with parents or other adults who can explain messages and support and reassure their children when they are exposed to frightening or sad content. Thus, an active mediation style appears to be the more useful style for reducing the negative effects of COVID-19 messages on children's emotion regulation. This finding is consistent with the few previous studies on the role of parental mediation of negative messages (Gil-Rivas et al., 2007; Remmerswaal & Muris, 2011). Moreover, the present study highlights that the active mediation style is associated with stronger emotion regulation in both children and adolescents, as suggested by the absence of significant moderating effects of age. Active mediation is based on parent-child communication, which is central to the cognitive and emotional processing of messages. Language makes it possible to move from the perceptual level of images to the representational level, thus enabling the

organization of thought (Bruner, 1983; Vygotsky, 1962). This is especially important when considering the role of highly emotional images that characterize negative events such as this pandemic. Moreover, language helps to process emotions, to cope with fear and anxiety, but also with grief. Therefore, communication, which is characteristic of active mediation, probably helps children to process their emotions and less to translate them into actions. Therefore, parents appear to play an important scaffolding role in the interpretation and emotional processing of media content to which children are exposed during a health emergency. In addition, this finding is consistent with previous studies highlighting that family communication is generally a protective factor for risk taking (e.g., Babore et al., 2014; Bianchi et al., 2019; DiIorio et al., 2003; Yang et al., 2007). Indeed, parents talking and discussing with their children can help them develop more decision-making skills and become aware of and express their emotions.

Despite the importance and relevance of the topic under investigation, this study has some limitations. First, the information was collected from parents, so there might have been a bias in the evaluation of the aspects examined in this study. Parents might overestimate or underestimate their children's exposure to news, and children's emotional responses might reflect their own emotions. As other authors have done (Babore Morelli et al., 2021), further research should combine parents' ratings with data collected directly from children, although this is not readily possible, particularly during this pandemic, due to physical distance. Second, the group of participants was not representative of the population studied, and further research should be conducted with a larger sample. Moreover, the sample was mainly composed by mothers: Therefore, future studies could be specifically conducted also on fathers in order to detect their specific risky or protective role in their children's psychological well-being. To our knowledge, only one study examined how fathers' parenting stress affected children's psychological functioning during the Italian COVID-19 lockdown (Trumello et al., 2021). Third, the cross-sectional design of the study prevents a causal interpretation of the relationships between variables; a longitudinal design would be appropriate to examine these relationships, also taking into account the evolving situation of the pandemic. Fourth, the study was conducted in Italy, and it would be interesting to investigate this topic in other sociocultural contexts, including the specific characteristics of the spread of COVID-19 and possible different features in both media communication about the pandemic and family dynamics due to cultural characteristics. Finally, further research should examine in more detail the specific content of the COVID-19 messages to which the children were exposed. This would provide a better understanding of the emotional responses they experienced. Because parental

mediation style likely reflects a broader parenting style, future research should also include measures of general parenting style to deepen understanding of the mechanisms influencing children's emotion regulation during this pandemic.

Despite these limitations, this study was timely in exploring a topic that remains largely neglected in studies of the psychological effects of the pandemic on children, and it provides suggestions for both the literature on parental mediation and practical applications. Our findings suggest that the construct of parental mediation is useful for examining the specific situation surrounding the COVID-19 pandemic and the ways in which parents can mediate messages to reduce their children's emotional difficulties. These findings therefore add to the literature on the role of parental mediation of negative messages. In terms of practical implications, our study shows the central role adults can play in communicating threatening messages during this ongoing pandemic. Children and early adolescents are exposed to a large amount of news and experience negative emotions that they cannot always process themselves. This situation is not limited to the lockdown period in which the data were collected, and the results are useful during the ongoing pandemic as well. We are all inundated with an overabundance of information and images related to COVID-19, and uncertainty and negative feelings are still widespread. This information overload is likely to be experienced passively, especially by children and young people. In this situation, it is therefore important that adults (parents, other relatives, teachers, and educators) adopt an active mediation style that helps children and young people to understand media content, manage emotions and reduce their negative impact. In particular, professionals working in communication with children should recognize the importance of using images alongside a narrative specifically tailored to children to enhance their cognitive and emotional understanding. These suggestions go beyond the current pandemic and would be useful for other future emergencies or events with high emotional involvement.

Compliance with Ethical Standards

Conflict of Interest The authors declare no competing interests.

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