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Article

Family Climate in Pandemic Times: Adolescents and Mothers

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Abstract

In this article, we examine changes in family climate during the first Covid-19-related lockdown in Germany. We compare the perspectives of mothers and adolescents to explore whether the factors of perceived changes in family climate are systematically and significantly different between these groups. We measure family climate as positive emotional climate, a sub-dimension of the family environment scale, to capture a feeling of cohesion and emotional openness within the family. Based on family system theory and the family stress model, we expect an overall deterioration in family climate due to increased environmental adaptation in the pandemic. Furthermore, we expect family climate to deteriorate less when families have economic and social resources available. On the other hand, we assume that being employed and/or primarily responsible for family care relates to a stronger decline in the family climate. We employ longitudinal survey data (AID:A) from around 300 German families with children aged nine to 17 and apply individual fixed effects models to investigate changes in family climate from 2019 to 2020. Almost half of our respondents report a decrease in family climate. For mothers, the share of unpaid care work at home is the only significant predictor: Mothers doing more than 80% of the chores and childcare feel a greater decrease in family climate. For adolescents, however, being at risk of poverty and having less frequent family activities are important predictors of stronger decreases in family climate. In summary, our results illustrate the relevance of distinguishing between the perspective of children and parents in family studies.

Keywords

adolescents; AID:A; Covid-19; family climate; Germany; lockdown; mothers

Issue

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1. Introduction

Over the course of the Covid-19 pandemic, which struck in early 2020, families have been regularly subject to stress as they attempt to deal with health threats and adapt to restrictions on public and private life. Closures of schools and daycare but also leisure facilities and associations, contact restrictions, domestic quarantine, and work and schooling from home have affected families' everyday experiences. In this study, we are interested in the consequences of these adaptation processes for the family itself, especially regarding how family climate,

that is the feeling of belonging together and emotional openness, has changed with respect to pre-pandemic states. Do parents and their (adolescent) children differ in their perspective on family climate? What factors may protect against deteriorating family climate under pandemic circumstances?

For Germany but also for other countries, the Covid-19 research concerning families centers on parental care work division and parental well-being. With respect to the former, most evidence points toward increased childcare hours for both mothers and fathers during the first pandemic lockdown, while the division of

childcare and housework in the parental couple did not persistently change with mothers shouldering most of this work (e.g., for Germany see Boll et al., 2021; Jessen et al., 2022; for Spain see Farré et al., 2022; for Italy, UK, and the US see Biroli et al., 2021). In light of these, several studies found a decrease in mental well-being, general life satisfaction as well as in satisfaction with work and family life in Germany (Huebener et al., 2021; Möhring et al., 2021) and across Europe (Biroli et al., 2021; Brodeur et al., 2021). However, the crisis has not affected everyone equally (e.g., Pailhé et al., 2022). Empirical evidence on well-being and life satisfaction points toward overall decreases in well-being with larger declines for mothers than for fathers (e.g., Etheridge & Spantig, 2022; Huebener et al., 2021; Zoch et al., 2021).

Evidence of how family climate is perceived by parents and children during the pandemic is relatively rare. German studies concerned with parents focus on satisfaction with family life (Huebener et al., 2021; Möhring et al., 2021; Zoch et al., 2021) or conflicts within the family (Langmeyer et al., 2022). These studies show important heterogeneities with stronger decreases in family satisfaction for individuals with (especially younger) children relative to childless adults and particularly mothers. Most of these studies find that the family's socioeconomic status or financial and housing situation play a role in moderating the negative effects. A number of German studies concerned with children and adolescents have investigated (mental) well-being or family climate. Concerning the latter, up to 50% of children and adolescents report experiencing a deterioration in family climate and more frequent conflicts during the first lockdown in the spring of 2020 (Ravens-Sieberer et al., 2022; Reim et al., 2022). Similar scenarios have also been observed in the international context (Biroli et al., 2021).

However, the crisis has also offered positive aspects for some families: Up to 25% of children and adolescents report an improvement in the atmosphere at home during the first lockdown; that is, they reported having more fun with the family and felt an improved family climate (Reim et al., 2022). Similarly, half of the families in France with a primary-school-aged child navigated the first lockdown with little impact on family well-being (Pailhé et al., 2022), and especially mothers reported an improvement or increase in stability in their relationships with their children during that period in the UK (Benzeval et al., 2020; Perelli-Harris & Walzenbach, 2020).

We contribute to these strands of the literature by directly comparing adolescents' and their parents' (i.e., mothers') perspectives on pandemic-induced changes in family climate. This allows us to investigate whether the factors of perceived changes in family climate are systematically and significantly different between mothers and adolescents and in which way. It also allows us to explore within-family differences of decreases in family climate, which is a unique feature of our study. Additionally, we provide a methodologically robust analysis employing panel data with base outcomes measured before the

Covid-19 pandemic. This means we do not need to rely on retrospectively reported changes (as, for example, in Reim et al., 2022). Furthermore, we evaluate changes in the short- to medium-term (i.e., four to five months) after the first Covid-19 lockdown in Germany rather than in the immediate impact of the first lockdown (as in most of the previous literature).

2. Theory

Our study focuses on changes in family climate during the pandemic. The family climate (and similar concepts) is consistently employed in diagnostic psychology (Hamilton & Carr, 2016) and is based on solidarity (cohesion), emotional openness (expressiveness), and the likelihood of conflict among family members. In the psychological literature, a positive family climate is understood as a preventive factor against, for example, child abuse (Glaser et al., 1993), bullying (Perren et al., 2009), or internet addiction (Yen et al., 2007), which makes it so important for family research. Importantly, family cohesion is often seen as a protective factor against the physical and psychological stress caused by the Covid-19 pandemic (Behar-Zusman et al., 2020; Prime et al., 2020). Here, we measure family climate as a positive emotional climate—one of the three subdimensions of the family environment scale (Moos, 1974; for German see Schneewind, 1988)—to capture the internal stability and cohesion of the relationships between family members. In this sense, a strong family climate is characterized by a strong sense of belonging to the family as a social group. Expressing one's feelings and perspectives is just as much a part of everyday interactions as treating each other with respect, even in conflict situations. In contrast, in families with a low family climate, problems and related emotions are rarely discussed openly, so conflicts tend to persist and family life is experienced as more stressful (Schneewind, 1988). In a recent study, Gomez-Baya et al. (2020) use data from the Children's Worlds project to show that family climate is significantly correlated with general life satisfaction for adolescents. However, correlation coefficients reaching from 0.36 to 0.56 per country indicate that family climate and life satisfaction represent related but different concepts. The question of who belongs to the family depends on the individual actors and the current situational framework (Morgan, 2011). Family events, rituals, shared knowledge about the family, or the naming of people and roles, for example, serve as integrative practices that distinguish family members from non-members (Finch, 2007; Galvin, 2006) but also within families the particular family members do not necessarily participate in these practices in the same way. Parents and children in particular thus can have different perspectives on their family and its climate (Schneewind, 2001). The classic family stress model refers to these different positions within the family system as it assumes, for example, that economic pressure can affect the

child's well-being by putting direct pressure on the parents in the first place and deteriorating the couple's relationship. The parent-child relationship then worsens, mediated by a deteriorating couple relationship and worsening parenting behavior, so the child also experiences pressure to adapt and may react with behavioral disorder (Conger et al., 2002). Thus, in this study, we investigate how family climate has developed during the pandemic in order to better assess possible long-term consequences for families' resilience. In the following, we investigate how parents and adolescents were affected differently by the pandemic, which can give indications of different needs. Therefore, we refer to family system theory and theories on social groups, gender, and social inequalities to propose hypotheses on what factors may be associated with changes in mothers' and adolescents' perception of family climate during pandemic times.

2.1. Why We Expect Family Climate to Deteriorate

Family system theory (Carr, 2015; Cox & Paley, 2003) understands the family as a social system within a larger environment (Bronfenbrenner, 1986). The family system alternates between states of internal stability and external adaptation (Cowan & Cowan, 2012). In the case of an external shock—here, the pandemic—the family system spends more energy to adapt to the changed environmental circumstances. Existing routines, rituals, and roles within the family system break up and re-stabilize in a new form. As the family is built on such institutionalizations through regular interactions (Berger & Kellner, 1964; Morgan, 2011), we expect family climate to worsen, at least temporarily, for both mothers and adolescents (Prime et al., 2020). As family stress theory (Conger et al., 2002) describes that stress factors originating from the family environment affect not only the family member that has to deal with that factor in the first place, but also spreads through the family system via family relationships. Thus, we expect all family members to be affected by the same resilience and risk factors although for different reasons, which leads to the first hypothesis:

H1: Overall, family climate decreases due to increased environmental adaptation to pandemic circumstances.

2.2. Does the Omission of Joint Family Activities Reinforce the Pandemic-Induced De-Stabilization of the Family?

According to research on the constitution and cohesion of social groups, primary groups such as families and peer groups (Cooley, 1909) define shared goals to generate high levels of social interaction. This results in a feeling of a shared identity and group membership and draws symbolic boundaries that separate the group from

its environment (Homans, 1962). Families, as an example of smaller groups, emphasize the individual character of their members and their unique group composition. Furthermore, the specific history and assumed continuation of family interactions are important pillars of the genesis and reception of the family as a social group (Tyrell, 1983). For instance, Hill's (1988) attachment hypothesis points to the amount of shared leisure time enjoyed by married couples as a predictor of lower levels of marriage dissolution within the subsequent five years of the first survey wave. Referring to Hill (1988), Roeters et al. (2010) find that mothers and fathers similarly report enjoying better relationships with their children with more frequent engagement in joint activities. As the pandemic came along with multiple restrictions regarding leisure activities, families may have adapted their routines by canceling well-established practices and adding new ones. Therefore, we further expect for both mothers and adolescents that:

H2a: The family climate decreases more strongly the more family activities decrease.

To some extent, family system theory rejects the one-directed interpretation of H2a that family climate decreases only when family activities decrease as well. Contrary to H2a, it could be expected that every change in family practice comes with a decrease in family climate, as every change entails an adaptation process, regardless of the direction of change.

H2b: The family climate decreases more strongly the more family activities change, regardless of the direction of change.

2.3. Can Social or Socio-Economic Resources Buffer the Destabilization of Families?

According to the capability approach (Sen, 2001), social and economic resources affect individuals' scopes of action. As described by Kuklys (2005), higher income is systematically correlated with higher income satisfaction, which indicates a better availability of capabilities due to a higher income level. We extend this interpretation in two ways. Following family stress theory (Barnett, 2008; Prime et al., 2020), we assume that social and economic resources affect not only individuals but also families as social groups. While certain family members might experience stress factors initially in other microsystems besides the family, they spread this factor within their family by sharing the consequences of these factors and their personal feelings with other family members. Available social and economic resources represent resilience factors helping all family members to cope with external stress factors. Additionally, we suggest that not only the family income, but also social-, status-related-, and digital infrastructure resources might enable capabilities to establish and

maintain family climate, for example, by keeping stress levels low, or by enabling the purchase of family support services or finding new opportunities for joint family activities. Regarding the economic resources, we can assume that the closure of schools and leisure facilities represents a material loss (e.g., of planned meals, spare time activities) that has to be compensated for by personal financial expenditure. On the other hand, shifting schoolwork to home introduces new material, spatial, and technical demands in the home, which specifically concern the availability of a suitable workspace and suitable equipment. In low-income households, in particular, we suspect that adapting to these requirements is associated with greater difficulties (Bujard et al., 2021; Sachser et al., 2021; van Lancker & Parolin, 2020). Additionally, social support might not only affect parents needing instrumental help to, for example, organize child caring (Pustulka & Buler, 2020), but also adolescents when they need to cope with constrained opportunities to meet friends (Settersten et al., 2020; Wang et al., 2022). However, Knabe et al. (2021) show that the impact of families' social networks in providing social support was significantly reduced by contact restrictions during the first lockdown. Moreover, adults with a higher educational background have a higher chance of working from home during the pandemic (Alipour et al., 2021). On the one hand, this reduced the risk of unemployment or reduced income stressing the family in total. On the other hand, working from home might have enabled parents to better care for their children and assist them in doing school from home. In detail, we expect for both mothers and adolescents:

H3: The family climate decreases less when families have higher levels of (a) economic, (b) social support, (c) educational, and (d) digital infrastructural resources available.

2.4. Are Double-Burdened Mothers Exposed to Greater Dips in the Perception of the Family Climate?

Family stress theory (Conger et al., 2002) points to the relevance of the individual positions and relationships of family members in transmitting external shocks into the family system. As the political constraints during the pandemic have mostly affected employment, educational, family, and spare time practices, persons in particular who are involved in a number of these systems have to adapt. Thus, we expect mothers to experience a stronger decrease in the family climate when they are employed and responsible for doing the chores and care work at home. Furthermore, Germany still constitutes a modernized male breadwinner system in which traditional gender roles structure the division of work and family life (Adler et al., 2016). As a result, mothers still bear the main burden of childcare and housework. Based on this strand of gender research, we expect especially mothers to feel more strongly affected by the increased need for

adaptation due to the pandemic restrictions when they are mostly responsible for care work at home (e.g., doing the chores or caring for family members), and additionally, when they are employed, and thus required to adapt to changes in the labor market:

H4: The family climate decreases more strongly for mothers and adolescents of families with (a) a mother shouldering the higher share of unpaid care work at home and (b) mothers in full-time employment.

3. Empirical Setup

3.1. Data and Sample

Our analysis employs longitudinal survey data from the 2019 wave of the German AID:A family panel (Kuger et al., 2020) and the 2020 AID:A Corona Add-On (Kuger et al., 2021), which was administered four to five months after the first Covid-19 lockdown in Germany (in July–August 2020). About 780 households were surveyed on the living conditions of children, youth, young adults, and parents in both waves.

The family climate in the AID:A survey is elicited based on four survey questions that use a six-point scale, from 1 (*applies fully*) to 6 (*does not apply at all*): (a) I like being with my family; (b) there is often friction in our family; (c) in our family we can talk about everything; (d) there is strong cohesion in our family. These items are a shortened version of the relationship dimension of the German family environment scale (Schneewind, 1988). Reliability analysis reveals that the second item impairs scale consistency significantly, that is, its inclusion decreases Cronbach's alpha from 0.737 to 0.645. Thus, we omit this throughout our analysis and aggregate the three remaining items into an 18-point index of family climate, with higher values representing greater levels of emotional integration within the family.

Our analysis sample consists of 461 mothers with minor children and 273 adolescents aged nine to 17 with non-missing responses on all three items concerning family climate and the relevant explanatory variables in both waves. While our main sample consists of individual family members, we perform additional within-family analyses on a subsample of 188 families, for which we have full information on both mothers and adolescents. Note that fathers were not asked about family climate. We roughly follow the World Health Organization's (2022) definition of adolescence defining adolescents as people between 10 and 19 years of age. Throughout the analysis, we employ inclusion weights for initial and continued survey participation (Valliant et al., 2018). We multiply the initial inclusion weight with an individual propensity weight for continued participation in the 2020 Corona Add-On study that corrects the sample regarding panel attrition bias due to poor contact information and contact quality from the first wave (e.g., interruptions of the

interview, household incompletely surveyed, or incorrect address).

Table 1 contains summary statistics of our measure of family climate for adolescents and mothers separately. We additionally report statistics for two subgroups of mothers: 306 mothers with adolescent children aged nine to 17 and 155 mothers with children no older than eight. Adolescents report on average lower levels of family climate than mothers. Mothers of children aged eight and under report the highest levels of family climate among the groups. For all groups of mothers and adolescents, the level of family climate decreases between 2019 and 2020.

Table A1 in the Supplementary File contains summary statistics of socio-demographics and the relevant explanatory variables at the family level. An indicator of whether there is more than one minor child in the household, the age of the youngest child (five categories), the share of male children, municipal population size, and migration background represent basic demographics. To address our hypotheses on resources, they are complemented by socio-economic indicators of parental education (at least one parent holds a university degree), poverty (net household income below 60% of the median income), and levels of social support (according to the Oslo social support scale by Kocalevent et al., 2018). Besides, we include maternal labor market attachment (four categories: not employed, less than 20, 20–32, or more than 32 weekly work hours) and maternal share of unpaid work (maternal share of total daily parental hours spent on childcare, chores, and organizational tasks within the family) to test the hypotheses specific for parents. For adolescents, we further report age and gender, as well as the availability of technical devices for school tasks during the first Covid-19 lockdown, and the frequencies of shared family activities (“how often are you doing the following activities in your spare time: joint activities with parents or siblings”) reported in 2019 and 2020 (see summary statistics displayed in Table A2 in the Supplementary File).

3.2. Analytical Strategy

Besides descriptive statistics, we employ panel models with individual fixed effects to examine the change in

family climate for mothers and adolescents between the pre-pandemic period of 2019 and a pandemic period about four to five months after the first Covid-19 lockdown in Germany in August–September 2020. Fixed effects models account for all observed and unobserved factors that are time-invariant. We employ standardized outcomes throughout the analysis.

We aim to first document and compare the extent of changes in family climate for mothers and adolescents and second to explore which socio-economic resources are associated with relatively more pronounced changes over time. We implement the latter by interacting the period dummy with a selection of socio-economic indicators (measured in 2019), one at a time. In particular, we investigate parental education, poverty, maternal labor market attachment, division of unpaid care work between the parental couple, and social support. All regressions control for whether an interview was conducted during school vacations.

4. Results

4.1. Documenting Changes in Family Climate During the Pandemic

We investigate perceived changes in family climate between 2019 and August–September 2020, comparing adolescents with mothers of adolescent children (Figure 1) and mothers of adolescent children with mothers of only younger children (Figure A1 in the Supplementary File). The left-hand graphic respectively depicts continuous changes along the 18-point scale of our measures of family climate, whereas the right-hand graphic depicts discrete information on whether family climate decreased, remained unchanged, or increased between 2019 and 2020.

About 44% of both adolescents and mothers of adolescents report decreasing family climate (Figure 1). For a similar fraction of 45% of mothers, the family climate remains unchanged, as well as for a somewhat lower share of 37% among adolescents. Finally, the proportion of adolescents reporting an increase in family climate is, at 19%, relatively higher than the share of mothers that do so (11%). Compared to mothers of adolescents, a larger share of mothers of younger children report a

Table 1. Summary statistics.

	2019			2020		
	Mean	SD	N	Mean	SD	N
<i>Family climate (18-point scale)</i>						
Adolescents (9–17)	13.837	1.551	273	13.010	2.242	273
Mothers (0–17)	14.274	1.209	461	13.246	1.993	461
Mothers (9–17)	14.231	1.249	306	13.294	2.033	306
Mothers (0–8 only)	14.351	1.135	155	13.163	1.926	155

Note: Weighted. Source: Authors' work based on Kuger et al. (2020, 2021).

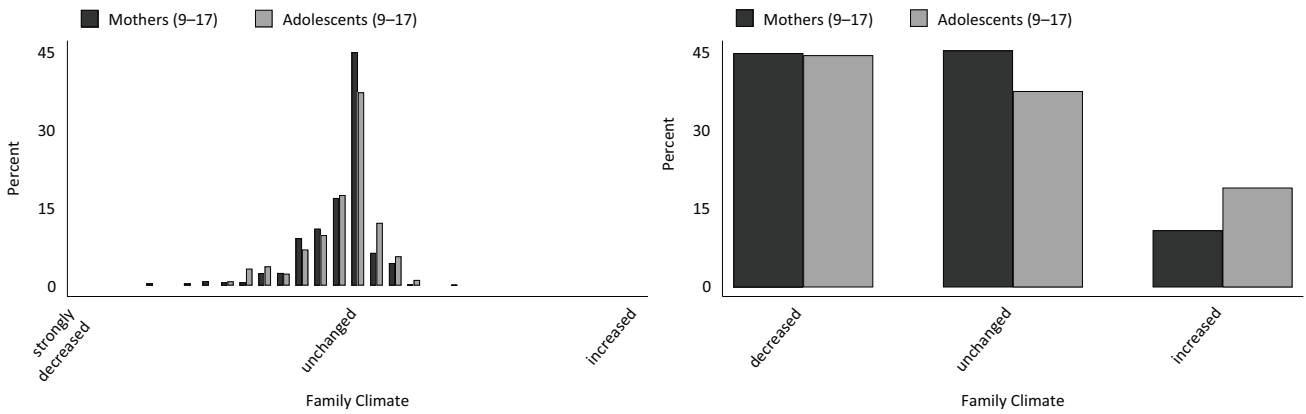


Figure 1. Changes in family climate: Adolescents and mothers. Notes: $N = 306$ mothers of children aged nine to 17 and 273 adolescents; weighted. Source: Authors’ work based on Kuger et al. (2020, 2021).

decrease in family climate (54 vs. 44%; Figure A1 in the Supplementary File).

A first set of panel estimations documents the extent of changes in family climate between 2019 and August–September 2020, as reported by adolescents and mothers, now accounting for individual heterogeneity (Table 2). We estimate an overall decrease of about 44% of a standard deviation for mothers of adolescents. Additional analysis reveals that the decrease appears slightly stronger for mothers of younger children than for mothers of adolescents, but the difference is not statistically significant (see Table A3 in the Supplementary File). Adolescents report a similar decrease of about 43% of a standard deviation. Indeed, this estimated decrease is not statistically different from the decrease estimated for mothers of adolescents (see Table 2, Column 2).

To explore within-family differences of decreases in family climate, we focus on a subsample of 188 families, for which we observe both mothers and adolescents. Note that this is necessarily an incomplete picture due to missing paternal information. Note also that we focus on decreases in family climate, since these are

more concerning and more pronounced than increases (see Figure 1). We find that, in almost a third of families (33%), neither mothers nor adolescents report decreases in family climate (Figure 2). In another third of families (34%), the mothers but not the adolescents report decreases. In 20% of families, it is adolescents but not mothers who report decreases in family climate; and in 13% of families, both mothers and adolescents report declines. That is, in just over half of the families in our analysis sample, there is a discord between mothers’ and adolescents’ perspectives on family climate. It is hence plausible that there might be important differences between mothers and adolescents in the factors associated with family climate deterioration during the pandemic.

4.2. Exploring Factors of Family Climate Deterioration During the Pandemic

To explore factors that play a role in changes in family climate during the pandemic, we interact the period dummy with various socio-demographic indicators.

Table 2. Changes in family climate between 2019 and 2020.

Sample	Mothers (9–17) (1)	Mothers (9–17) and youth (9–17) (2)	Adolescents (9–17) (3)
2020	-0.443*** (0.088)	-0.502*** (0.093)	-0.427*** (0.101)
School vacation	-0.075 (0.110)	-0.014 (0.089)	0.004 (0.123)
2020 × youth		0.085 (0.094)	
Constant	0.373*** (0.035)	0.284*** (0.028)	0.160*** (0.040)
Observations	612	1,162	546

Notes: The dependent variable is family climate (standardized); individual fixed effects regressions; robust standard errors in parentheses; standard errors in Columns 5 and 6 are cluster-robust at the household level; weighted; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Source: Authors’ work based on Kuger et al. (2020, 2021).

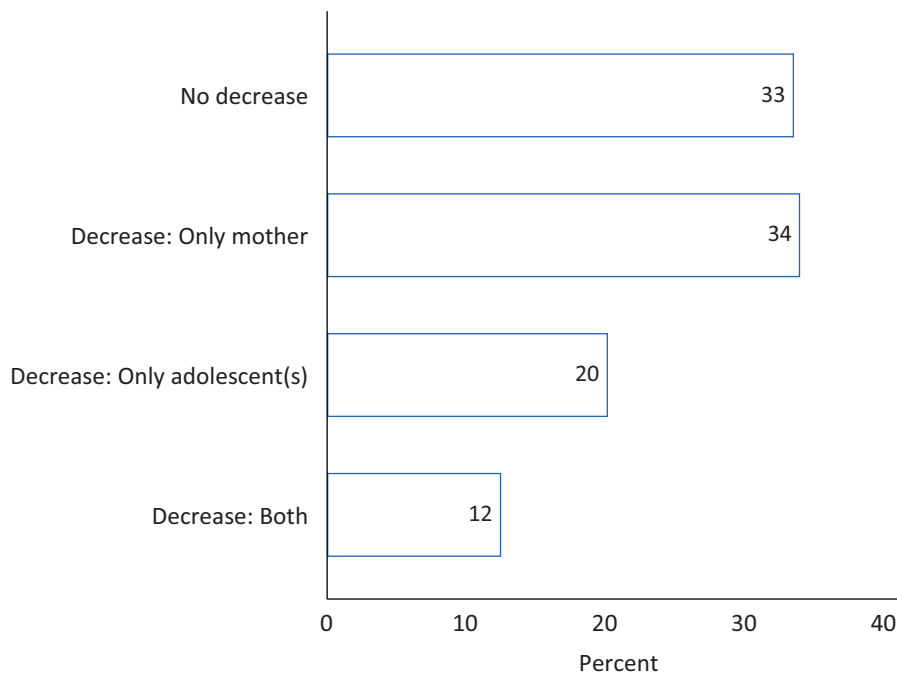


Figure 2. Within-family constellations of decreases in family climate: Adolescents and mothers. Notes: $N = 188$ families with both mother and adolescents observed; weighted. Source: Authors’ work based on Kuger et al. (2020, 2021).

Before we investigate the role of economic and social resources and status concerns, we also examine whether basic demographic factors are associated with relatively more pronounced changes over time (see Tables A.5 and A.6 in the Supplementary File). We find, for example, that the share of male children in the household and living in a rural area are relevant factors mitigating the deterioration of family climate for mothers, but only for those with younger children. Own gender does not play a significant role in how adolescents perceive changes in family climate. Migration background appears to augment decreases in family climate for mothers of adolescents. While the age of the youngest child in the household plays no apparent role in family climate, own age appears to matter for adolescents. In fact, nine- and 10-year-olds report on average no significant decreases in family climate between 2019 and 2020, while older age groups increasingly do so. Whether there is only one or more than one minor child in a household appears to have no relevant association with decreases in how mothers perceive family climate. However, having siblings appears to significantly reduce decreases in family climate for adolescents.

We now turn to our main analysis. Table 3 presents interactions of the period dummy with indicators of educational family background, poverty, maternal labor market attachment, division of unpaid care work, and social support. At least one parent holding a university degree does not shelter from a decrease in perceived family climate, neither for mothers nor for adolescents. A net household income below the poverty line is associated with stronger declines in family climate among adolescents, while it is not significantly correlated with changes

among mothers of adolescents. Note that whether every minor child has their own room is not associated with either (see Table A7 in the Supplementary File). On the other hand, for mothers of adolescents and for adolescents, maternal labor market attachment (weekly working hours) does not appear to play a significant role in their perception of changes in family climate. For mothers with adolescent children, the only significant factor among those investigated here is the share of unpaid care work. If the reported time spent by mothers on unpaid care work (i.e., childcare and housework) amounts to more than 80% of the total time spent on unpaid care work in the parental couple, these mothers report relatively stronger decreases in family climate. The division of care work in the parental couple is, however, not a relevant factor for how mothers of younger children perceive changes in family climate (see Table A4 in the Supplementary File). Finally, levels of social support, according to the Oslo social support scale, do not seem to be a relevant factor for either group.

We expand the analysis for adolescents and investigate whether the availability of technical devices for school tasks during the lockdown and/or changing frequencies of family activities are related to their perception of family climate. On average, the frequency of family activities increased between 2019 and 2020 (see Table A2 in the Supplementary File). Since family activities have been surveyed among respondents aged 12 and older in 2020, the analysis is restricted to the 12–17 age group. We find that in families that adjusted the frequency of their joint family activities to “daily” or at least “several times a week” during lockdown, adolescents were significantly less likely to report a deterioration of family climate

(see Table 4). This shows us that increasing the frequency of joint family activities in relative terms was not sufficient. In order to provide sufficient protection against a deterioration of the family climate, the frequency of joint

family activities had to increase to at least several times a week or even daily. Because this was only possible in a limited number of families, the family climate deteriorated on average for all respondents.

Table 3. Changes in family climate by education, poverty, maternal labor market attachment, division of unpaid care work, and social support.

Sample	Mothers (9–17) (1)	Adolescents (9–17) (2)
2020	-0.524*** (0.114)	-0.326*** (0.118)
2020 × parent university degree	0.195 (0.125)	-0.209 (0.147)
Observations	612	546
2020	-0.448*** (0.095)	-0.324*** (0.087)
2020 × <60% median income	0.038 (0.184)	-0.637*** (0.240)
Observations	612	546
2020	-0.502** (0.199)	-0.491** (0.201)
2020 × mother ≤20 hours/week	-0.022 (0.256)	0.225 (0.234)
2020 × mother 21–32 hours/week	0.061 (0.208)	0.008 (0.226)
2020 × mother ≥33 hours/week	0.141 (0.206)	0.003 (0.239)
Observations	612	546
2020	-0.338*** (0.086)	-0.408*** (0.107)
2020 × ≥80% maternal share unpaid work	-0.556*** (0.204)	-0.094 (0.159)
2020 × single mother	-0.276 (0.280)	-0.368 (0.367)
2020 × father info missing	0.112 (0.117)	0.242 (0.190)
Observations	612	546
2020	-0.572*** (0.198)	-0.243 (0.197)
2020 × Oslo: Medium	0.066 (0.222)	-0.233 (0.227)
2020 × Oslo: Strong	0.233 (0.206)	-0.170 (0.216)
Observations	612	546

Notes: The dependent variable is family climate (standardized); all models include an indicator for the interview held during school vacations and a constant; individual fixed effects regressions; robust standard errors in parentheses; standard errors in Column 4 are cluster-robust at the household level; weighted; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Source: Authors' work based on Kuger et al. (2020, 2021).

Table 4. Changes in adolescents' perception of family climate by equipment and activities with family.

Sample	Adolescents (9–17) (1)	Adolescents (12–17) (2)
2020	-0.333** (0.163)	-0.511*** (0.121)
2020 × equipment: Always	-0.123 (0.162)	
<i>Activities with family:</i>		
Daily		0.446** (0.181)
Several times a week		0.436** (0.185)
<i>1–2 times per week (ref.)</i>		
1–2 times per month		0.292 (0.197)
Less frequent		-0.253 (0.287)
Never		-1.511 (1.177)
Constant	0.161*** (0.040)	-0.138 (0.101)
Observations	546	358

Notes: The dependent variable is family climate (standardized); all models include an indicator for the interview held during school vacations and a constant; individual fixed effects regressions; standard errors cluster-robust at the household level; weighted; * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$. Source: Authors' work based on Kuger et al. (2020, 2021).

5. Conclusion

How did the family climate change compare to pre-pandemic states? Our findings suggest, similar to what has been found for personal life satisfaction (e.g., Huebener et al., 2021; Zoch et al., 2021), that perceived family climate decreased significantly over the pandemic for roughly half of our surveyed mothers and adolescents. This supports the findings of, for instance, Perelli-Harris and Walzenbach (2020) and Reim et al. (2022) and is particularly concerning given that family climate can be a resilience factor supporting families in coping with challenging living conditions like child abuse, bullying, and internet addiction (e.g., Glaser et al., 1993; Perren et al., 2009; Yen et al., 2007). However, a significant proportion of mothers and adolescents also report an increase in the family climate supporting the findings of, for instance, Perelli-Harris and Walzenbach (2020) and Reim et al. (2022). These could be families who were not particularly challenged by adjustments or whose family practices were even confirmed by the pandemic situation. Further research could make an effort to reveal these mechanisms in detail.

While mothers and adolescents perceive comparable decreases in family climate, their predicting factors differ. Mothers that were primarily responsible for child-

care and housework before the pandemic perceive a stronger decline in the family climate. This might reflect a greater adaptive performance based on the existing gender-specific division of labor within the respective household (e.g., Boll et al., 2021; Jessen et al., 2022). From family system theory, we suggest that mothers primarily responsible for doing the chores and care work at home were also responsible for changing and reorganizing family practices during the pandemic. Additionally, they might be involved in conflicts among family members more often resulting in a stronger decrease in their perception of the family climate. On the other hand, the change in the family climate of mothers is similar regardless of the work arrangements and educational background of the parents within households. This result is similar to earlier findings on work arrangements and satisfaction with the family of Zoch et al. (2021) but contradicts the findings on education and life satisfaction of Ohlbrecht and Jellen (2021).

For adolescents, the division of labor between their parents does not seem to make any difference in terms of their perception of the family climate. These results do not support the findings of Langmeyer et al. (2022) who point to the relevance of mothers not working or working at flexible working hours for a better child's well-being. Whereas this was no significant factor for mothers, for

the adolescents in our study, the availability of financial resources is an important factor. On the one hand, we can assume that the closure of schools and leisure facilities represents a material loss (e.g., of planned meals, spare time activities) that has to be compensated for by personal financial expenditure. On the other hand, shifting schoolwork to home introduces new material, spatial, and technical demands in the home, which specifically concern the availability of a suitable workspace and suitable equipment. In low-income households, in particular, adapting to these requirements is more difficult (see also Bujard et al., 2021; Sachser et al., 2021).

Additionally, our results support the assumption that a positive family climate depends on regular interactions within the family. We observed a decrease in the perceived family climate when there was also a decline in family activities; frequent family activities in the pandemic, thus, were able to prevent a decrease in family climate. We also found that family activities occurred slightly more frequently in our sample after the first lockdown than before the pandemic, which we assume to be a concrete strategy of families to maintain family relations.

In contrast, social support from friends, neighbors, and relatives (reported before the start of the pandemic) had no association with changes in perceived family climates. Our results support the assumption of Knabe et al. (2021) that the impact of families' social networks was significantly reduced by contact restrictions during the first lockdown. Contrary to our expectations, we were not able to find an association between the change in the perceived family climate and the availability of technical devices reported retrospectively by the adolescents.

There are some limitations to take into account when interpreting our study. First, we cannot make any statements about fathers' perceptions of the family climate, since they did not receive the respective survey questions. However, with a view to the division of labor within the family, we consider it essential to include the perspective of fathers in future research to improve the interpretation of the results. Second, most of the explanatory variables are not available from the longitudinal perspective, so our interpretation is based on group-specific changes in the family climate over time. This makes causal interpretations significantly more difficult, and thus these should be viewed with caution, which is why we limit ourselves to presenting simple associations. Finally, the repeated survey resulted in an extensive decrease in the sample size, which can potentially be accompanied by distortions in the sample structure. With inclusion weights, we tried to compensate for varying inclusion probabilities due to the contact quality in the initial survey. Nevertheless, we assume stronger panel attrition for people with a migration background and limited knowledge of German, as well as families with higher burdens due to the pandemic. Thus, our findings may underestimate the statistical effects on the total population.

While our study describes the comprehensive changes in family climate between 2019 and 2020, future research should disentangle the effects of school/daycare closures and the overall effects of the pandemic, for example by using regional variation in the intensity of school closures. We will be able to deal with these questions in the following waves of the AID:A survey. A second question to be tackled by future research would concern how perceptions of family climate develop in the further course of the pandemic, which families manage to return to their baseline levels, and which show permanent deterioration.

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Conflict of Interests

The authors declare no conflict of interests.

Supplementary Material

Supplementary material for this article is available online in the format provided by the author (unedited).

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