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Abstract

We analyze data from the UK Household Longitudinal Study, including a pre-pandemic baseline and seven survey waves between May 2020 and September 2021. Fixed effects panel regression models are run over more than 11,000 individuals, distinguishing among women and men with young children (< 5 years), older children (5-15 years), or no children in the household. We hypothesize that declines in life satisfaction during the first lockdown are sharper among parents, whose domestic demands increase, than among the childless. We develop competing hypotheses that parents might be resilient and have higher life satisfaction during the later phases (*Adaptation Hypothesis*) or that the pandemic stressors accumulate, leading to even lower satisfaction during (*Accumulation Hypothesis*). The results only support the *Accumulation Hypothesis* among mothers. Whereas mothers fared comparatively well during the first lockdown, further pandemic stressors have seemingly exhausted their resilience, leading to stronger declines during the winter 2020/2021 lockdown. Among men with older children and without children, life satisfaction decreased during the first and subsequent lockdowns. Men with young children were the only group with almost unchanged life satisfaction throughout the pandemic.

Keywords

COVID-19, Corona, life satisfaction, gender, family, well-being

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Note: Replication files are available here: https://osf.io/shnkd/

1. Introduction

In a recent review, Nomaguchie & Milkie (2020: 198) argued that "[u]nderstanding social aspects of parental well-being is vital because parents' welfare has implications not only for the parents themselves but also for child development, fertility, and the overall health of a society." Hence, next to investigating the role of reproductive histories in long-term objective health outcomes, numerous studies over the past decade also assessed subjective outcomes, aiming to solve the "parenthood happiness puzzle" (Kohler & Mencarini, 2016), for example. This research showed that parenthood is not necessarily related to higher parental subjective well-being and that the effects of fertility on individuals' life satisfaction are diverse, depending on gender, parity, partnership status, and life-cycle stage, for example (e.g., Margolis & Myrskylä, 2011; Pollmann-Schult, 2014).

The COVID-19 pandemic, arguably the single most important direct and indirect threat to global population health in the 21st century thus far, has further spawned both researchers' and the general public's interest in the role of children in adults' well-being. Studies indicate heterogeneities in people's susceptibility to experience elevated levels of stress during the pandemic, showing, for example, that parents tended to suffer from higher levels of psychological distress than the childless (e.g., Kowal et al., 2020; Li et al., 2022). This finding has been suggested to result mainly from extra burdens brought about by closures of childcare facilities and schools (e.g., Cheng et al., 2021; Hiekel & Kühn, 2021; Huebener et al., 2021).

However, Rudolph & Zacher (2021) showed that increasing family demands during the early months of the pandemic in Germany were not necessarily paralleled by decreasing satisfaction with family life. Their findings also indicate that individuals with children and partners were better able to adapt to the pandemic, more rapidly developing new routines to reduce family demands. The authors argue that having a partner may buffer against the translation of 'objective' parenting demands into their psychological manifestation as 'perceived' family demands (Rudolph & Zacher, 2021: 257; also see Xue & McMunn, 2021). Moreover, Schmid et al. (2021) suggest that the presence of children partially alleviates COVID-19-related decreases in partners' relationship satisfaction.

Most previous studies have been limited to the early phase of the COVID-19 pandemic and its first lockdown. The ways in which the experience of recurrent lockdowns affected individuals' life satisfaction and whether potential adaptation or cumulative processes differ

by parental or partnership status remain largely unknown. Hence, the *current study* sets out to provide longitudinal evidence on the dynamics of life satisfaction during the COVID-19 pandemic using a sample of parents and childless respondents participating in the UK Household Longitudinal Study and its supplementary COVID-19 panel survey (see Burton et al. 2020). We employ these unique data to monitor changes in individuals' life satisfaction from the pre-pandemic baseline (measured in 2019) across seven panel waves from May 2020 through September 2021 to assess *processes of adaptation and accumulation*.

2. Background

Studies investigating the relationship between parenthood and well-being more generally and those focusing specifically on fertility's role in life satisfaction have produced mixed findings (see Nomaguchi & Milkie, 2020), partially resulting from their different methodological approaches but also due to the complexity of the "parenthood happiness puzzle": Whether and how having children affects adults' life satisfaction seems to depend on gender, parity, partnership status, life-cycle stage, and country contextual factors (e.g., Kohler & Mencarini, 2016; Margolis & Myrskylä, 2011; Pollmann-Schult, 2014).

For the UK – which constitutes the societal context of the present study – Angeles (2010) reported a large positive effect of having (more) children on married individuals' life satisfaction, whereas unmarried parents appeared to be worse off. Clark & Georgellis (2013) showed that female life satisfaction had already increased before the birth of a child and remained high until birth but quickly reverted to its baseline level, whereas fathers exhibited no change in life satisfaction at any time. Conversely, Myrskylä & Margolis (2014) found very similar trajectories surrounding entry into parenthood for both men and women: Happiness increased in the years around the birth of a first child and then decreased to pre-birth levels. Similar to Clark & Georgellis (2013), happiness was shown to increase before birth, presumably capturing the broader process of childbearing. Moreover, the analysis by Myrskylä & Margolis (2014) revealed that having up to two children increased happiness, mostly for those who had postponed childbearing, and that the patterns found in the UK are very similar to those in Germany.

Shocks, such as the COVID-19 pandemic and its related challenges, may change the "balance sheet" between the joyful rewards and stressful demands of parenting, which appears to vary strongly across social statuses, individuals' life course, and social policy

contexts (Nomaguchi & Milkie, 2020: 201). Against this background, a new wave of studies set out to investigate the role of children in adults' mental well-being, including life satisfaction. For the UK, Etheridge & Spantig (2020), focusing on gender differences, showed that parents indeed faced slightly larger declines in affective well-being than those without children at the beginning of the pandemic. Similar results were reported by Xue & McMunn (2021), who concluded that lockdown in April/May 2020 particularly strongly affected people with families and single mothers in terms of increased psychological distress. They also identified partner support as an important buffer for job-related stress and a positive spillover between family and work. Moreover, Cheng et al. (2021) found the deterioration of mental health during the first lockdown to be worse for working parents (especially mothers) and to be strongly related to increased financial insecurity and time spent on childcare and home schooling.

These findings for the UK were confirmed in a number of studies using data from, for example, Germany: Huebener et al. (2021) found that during the lockdown in spring 2020, life satisfaction declined disproportionally among parents, especially those with young children, as well as for women and those with lower levels of education. Their results were largely corroborated by Vicari et al. (2022), who – for the same period of time but using a different data source – further suggest that working and childcare conditions as well as personal worries contributed to the observed decline in working parents' subjective well-being (also see Hiekel & Kühn, 2021). Importantly, descriptive findings indicate substantial heterogeneity in the dynamics of working parents' life satisfaction: Whereas a majority of respondents exhibited a decline, substantial proportions of mothers (~25%) and fathers (~40%) reported no change – or even minor improvements (~10%) – in their subjective well-being (Vicari et al., 2020: Figure 1; also see Schmid et al., 2021). Finally, Li et al. (2022) reported that during the first and third waves of the COVID-19 pandemic (through April 2021), parents experienced higher levels of parenting stress and psychological distress than other groups. This was particularly the case for mothers and single parents, those with more (2+) and younger (< 11 years) children, and those facing financial insecurity and working from home. Overall, previous research indicates substantial gender and socioeconomic inequalities in parents' subjective well-being during the pandemic.

3. Hypotheses

Based on various *theoretical frameworks* proposed to conceptualize the link between parenthood and life satisfaction (see, for example, Mikucka & Rizzi, 2020: Section 2), we derive the following *hypotheses* regarding the dynamics of life satisfaction among parents over the course of the COVID-19 pandemic in the UK: To begin with, and in line with economic approaches, closures of childcare facilities and schools in the first lockdown of the pandemic in spring 2020 (Benzeval et al., 2020), coupled with an overall increase in working from home (Felstead & Reuschke, 2020), led to higher domestic demands, especially among parents (concerning both childcare and housework, e.g., Hudde et al., 2021; Sevilla & Smith, 2020). This placed parents at a higher risk of work-family conflict, both in absolute terms and relative to people without children in the household (e.g., Reimann et al., 2022). Compared to the childless, this should result in a stronger initial decline of life satisfaction in the early phase of the pandemic among parents (*Initial Lockdown Hypothesis*), especially mothers, as indicated in prior studies (e.g., Cheng et al., 2021; Xue & McMunn, 2021).

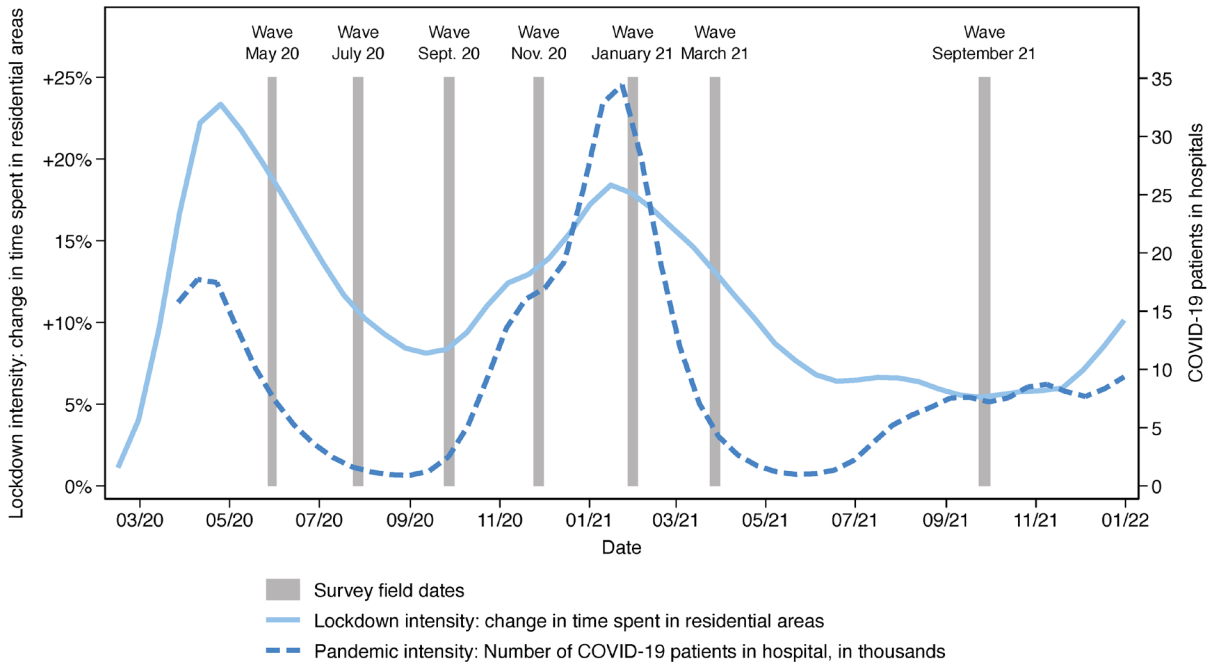
The spread of the Covonavirus slowed after the first lockdown, and containment and social distancing measures were gradually relaxed. However, later and recurrent infection waves again required containment policies with varying lockdown intensities (cf. Figure 1). Regarding possible longitudinal impacts over the course of the pandemic, we propose two competing hypotheses. *First*, previous research has provided ample evidence of rather high levels of resilience – that is, the ability to recover from or adjust to misfortune or change – in times of crisis (e.g., Cummins & Wooden, 2014). In line with set point theory, one may expect individuals to adapt relatively quickly to the pandemic situation and to return to their pre-pandemic level of life satisfaction (e.g., Clark & Georgellis, 2013; Myrskylä & Margolis, 2014). During the first lockdown, people may have developed mental and behavioral scripts to cope with the crisis (Rudolph & Zacher, 2021). Even if the intense infection wave and lockdown of fall/winter 2020/2021 was unexpected for some, they potentially were able to draw on these scripts, partly protecting them against the stressors of lockdowns during later phases of the pandemic. Above, we hypothesized that parents experience a sharper initial decline in satisfaction. If they possess a sufficiently high levels of resilience, they will rapidly adapt to pandemic stressors and experience a quick recovery. During later phases of the pandemic, even during lockdowns, their life satisfaction will decline less than during the first pandemic phase (*Adaptation Hypothesis*).

Second, as mentioned above, the COVID-19 pandemic is not one singular event. Rather, it is a long-term crisis with different and often unpredictable crisis intensities. In summer 2020, parents may have just started to recover from the strain of the first pandemic wave, and they may have believed that the worst was behind them. The next infection waves and ensuing lockdowns were then a new shock. Even worse, this next shock potentially hit them at a time when they had only partially recovered. We might therefore observe 'cumulative trauma load' or scarring effects, where the subsequent pandemic phases pulled people down to lower lows than the first pandemic wave did (e.g., Sacchi et al., 2020; Simona-Moussa & Ravazzini, 2019). Parents in particular might have experienced such a cumulative disadvantage because they may have been hit hardest during the first wave and may have been exposed to longer-term child-related stressors and work-family conflicts over the course of the pandemic (*Accumulation Hypothesis*).

4. Method

Data. We analyze data from *Understanding Society: The UK Household Longitudinal Study* (Platt et al. 2020; also see Burton et al. 2020). Specifically, we use Waves 10 and 11 of the Understanding Society's main survey conducted in 2018-2019 and 2019-2020 (University of Essex 2020) as well as seven COVID-19 study waves conducted between May 2020 and September 2021 (University of Essex 2021). In Understanding Society's main survey, respondents are interviewed every year, and each survey wave has a field period of two years. Therefore, two survey waves are always fielded at the same time. As a pre- pandemic baseline for our analyses, we use surveys from 2019 that were either part of the later field period of Wave 10 or part of the earlier field period of Wave 11. Understanding Society's COVID-19 study was initiated as a high-frequency panel on people's experiences and reactions to the COVID-19 pandemic (Institute for Social and Economic Research 2021). All Understanding Society respondents who had participated in at least one of the previous two waves of the main survey were eligible.

Figure 1: Timing of the COVID-19 survey periods in the context of pandemic impact in the United Kingdom. The proxy for lockdown intensity comes from the Google COVID-19 Community Mobility Reports and refers to the time spent in any residential area relative to a pre-pandemic baseline.



Survey timing in the pandemic context. *Figure 1* relates the timing of the survey interviews to the course of the COVID-19 pandemic. It plots the fieldwork periods of the survey waves against two proxies for pandemic activity and lockdown intensity, namely, the number of COVID-19 patients who were in hospitals and a measure of people's mobility patterns. Any effective lockdown measure will reduce people's mobility and increase their time spent at home. Therefore, we use aggregate information on the change in time spent in any residential area from the Google COVID-19 Community Mobility Reports as a proxy for the position on the lockdown-normality continuum (Google LLC 2022; Nitsche & Hudde 2022). During the observation period, the United Kingdom experienced two major infection and lockdown waves. The first wave in spring 2020 prompted the most intense lockdown. The first interviews during the pandemic occurred in May 2020, when hospitalization cases were declining and the lockdown intensity was high but decreasing. Toward summer 2020, hospitalizations neared zero, and the lockdown became moderately less intense. The fieldwork period for the September interviews falls into the near-normal situation, before the pandemic again gathered momentum and the second major wave of winter 2020/21 emerged. The soaring number of cases in winter 2020/21 led to many more hospitalizations than in the first wave of

2020. However, the societal reaction was less severe; that is, social life was less halted during the winter of 2020/21 than during the spring of 2020, as shown by the mobility data. Overall, the survey's fieldwork dates cover the major phases of the first one and a half years of the pandemic: the harsh lockdown of the first wave (May 2020 survey wave), the relative normalization (July and September 2020), the emergence and peak of the second major wave (November 2020 and January 2021), and yet another move toward normalization (March 2021 and September 2021).

Survey methods and weights. Beginning in the Understanding Society study's Wave 8, face-to-face in-home interviewing was gradually replaced by web interviews (Burton et al. 2020). For the interviews of Wave 10 and the 2019 interviews of Wave 11, 70 percent of respondents were invited to participate via the web, and the other 30 percent were invited to participate face to face. For the COVID-19 study, the interview mode shifted almost entirely to online (Burton et al. 2020). The high share of online interviews in the pre-COVID sample is beneficial for our analyses because it means that the survey-mode differences between the pre-COVID and COVID surveys were smaller than those for surveys that had a higher share of in-person interviews before the pandemic.

Understanding Society has a complex design, and the data providers strongly suggest using weights (Institute for Social and Economic Research 2021). In the Understanding Society sample, some groups, such as people from Northern Ireland and ethnic minorities, are overrepresented by design, and some groups are more likely to respond than others. Using weights ensures that we average within-person changes over a representative population. We therefore apply the longitudinal weight provided for the most recently available wave to all analyses (Institute for Social and Economic Research 2021). A substantial share of the sample, 34.4%, have a weight of zero.

Sample selection. Our sample consists of all individuals who participated in a pre-pandemic baseline wave of the Understanding Society study and in at least one out of the seven COVID-19 waves featuring a question on life satisfaction. As a pre-pandemic baseline, we take each respondent's interview from 2019 (which may be part of Wave 10 or 11). The sample is restricted to adults up to the age of 65. People living with their grandchildren are excluded. Information on life satisfaction is missing for 2.6% of observations, resulting in an analytical sample of 11,390 individuals who participated in the baseline wave and in 5.0 out

the 7 COVID-19 survey waves (68,232 person-waves). A total of 35.4% of the sample have children in the household.

Respondents with and without children differ greatly in their age distributions. Thus, the fixed effects estimator for parents, i.e., individuals with children living in the household, averages over a different age distribution than that for those without childcare demands during the pandemic. Life satisfaction during the pandemic might develop differently, depending on age group. Therefore, to better understand the effect that the presence of children has on changes in life satisfaction, we have to consider comparable age groups. To achieve this, we re-weight the people without children living in the household such that the weighted age distributions are the same for people with and without children. The re-weighting mainly reduces the influence of people aged 50 or over.

Table 1. Sample overview and descriptive statistics.

	Number of observations		**Life Satisfaction at baseline**			**Change in life satisfaction relative to baseline**		
	Indivi-duals	Waves x ind.	mean	sd	histo-gram	mean	sd	histo-gram
Women								
No children	4,853	27,682	4.70	1.48		-0.08	1.42	
Children age 5-15	2,041	9,363	4.94	1.44		-0.06	1.36	
Children age < 5	1,065	4,178	5.02	1.39		-0.27	1.37	
Men								
No children	3,286	18,452	4.57	1.55		-0.19	1.50	
Children age 5-15	1,261	5,751	4.84	1.46		-0.32	1.45	
Children age < 5	700	2,806	5.16	1.38		0.04	1.39	
All groups combined	11,390	68,232	4.74	1.49		-0.14	1.44	

Note: Life satisfaction ranges from 1 to 7.

Measures. We compare respondents with and without children up to age 15 living in the same household. We further distinguish between those having at least one child under the age of 5 and those with at least one child aged 5 to 15 (but no children under the age of 5). Overall life

satisfaction is measured with the following item: “On a scale from 1 to 7 where 1 = 'Completely Dissatisfied' and 7 = 'Completely Satisfied', please tell me the number which you feel best describes how dissatisfied or satisfied you are with your life overall.” – See *Table 1* for descriptive sample statistics.

Methods. We *first* show descriptive levels of life satisfaction by wave and household composition. Here, we only analyze within-person changes (and not between-person differences) and therefore generate the descriptive patterns using person-level fixed effects regression models. *Second*, we consider lockdown intensity. We estimate person-level fixed effects regressions where the main predictor is a continuous lockdown intensity measure, that is, the change in the time people spent in any residential area (cf. the solid line in Figure 1). We thereby test how strongly people’s life satisfaction was hampered by pandemic-induced lockdowns. To ensure that the aging effect of life satisfaction is not falsely attributed to the progression of the pandemic, all regression models control for age and age squared. *Third*, and finally, we combine the temporal perspective over time with our intensity measure to address whether and in what respect lockdown intensity in the early and later phases of the pandemic differently affected life satisfaction. This allows us to examine adaptation and/or cumulative processes.

Note that all results are presented separately for men and for women, as previous research suggests profound gender differences. Moreover, we differentiate between having no children in the household, younger children (< age 5), or older (aged 5-15) children.

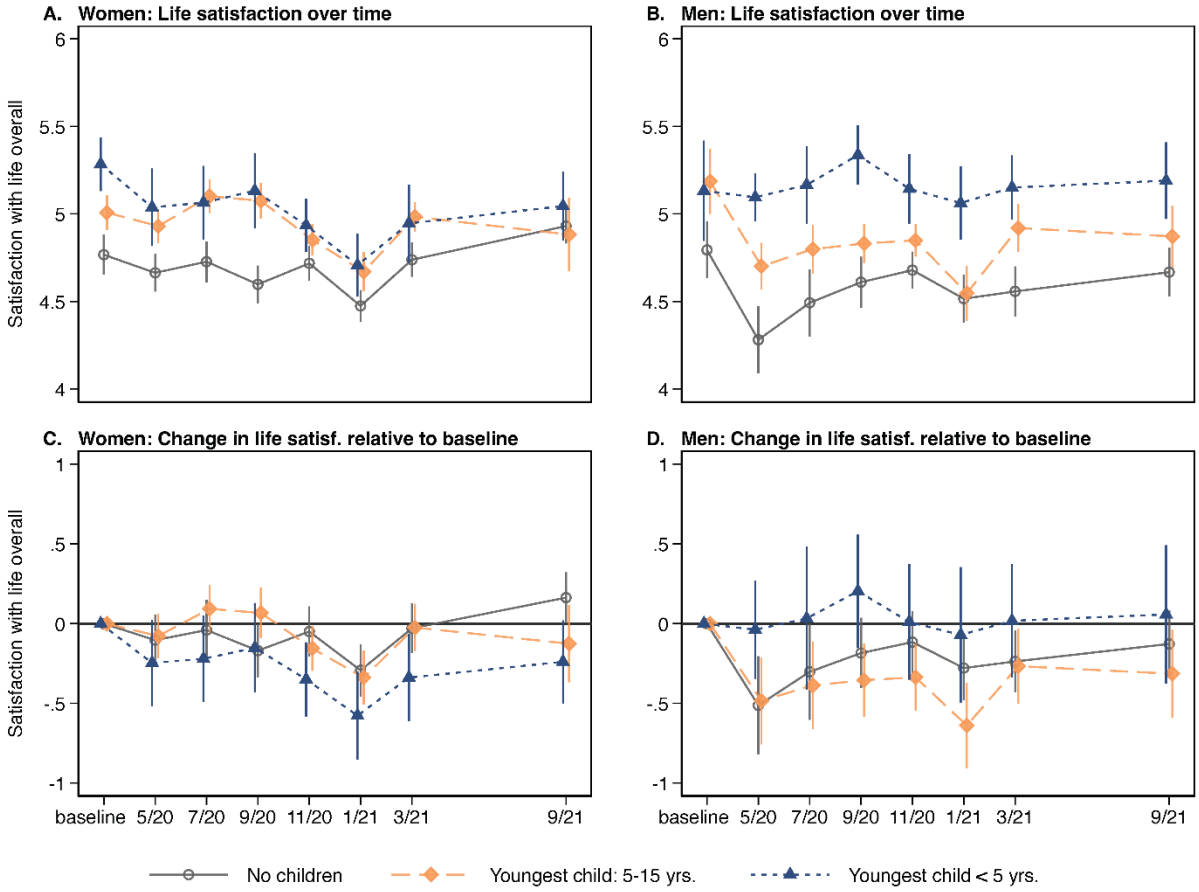
5. Results

Life satisfaction between May 2020 and September 2021

Figure 2 shows trajectories of life satisfaction and changes in life satisfaction relative to 2019 separately for women and men. The plotted trajectories are based on fixed effects regression models and thereby within-individual changes over time. The top panels (A and B) show the absolute values of life satisfaction, and the bottom panels (C and D) show the change relative to baseline. We first compare women with no children living in the household to mothers with children of different ages. At baseline, in 2019, mothers of young children exhibited the highest life satisfaction, mothers of older children took a medium position, and women without children in the household exhibited the lowest life satisfaction (panel A). Over the one

and a half years of the pandemic, these differences decreased, and in September 2021, there were no substantial or statistically significant differences among the three groups.

Figure 2: Life satisfaction, absolute and relative to baseline (pre-pandemic): by gender, household type, and time. The results are from panel regression models with fixed effects at the individual level.



Panel C shows that in the first lockdown in spring and early summer 2020, life satisfaction of mothers of young children declined, partly recovered in September and decreased even more strongly in fall/winter 2021 compared to pre-pandemic life satisfaction. By the end of our observation period in September 2021, life satisfaction was no longer statistically significant from baseline. Among mothers of older children, life satisfaction remained mainly stable during the first pandemic wave and declined moderately during fall/winter 2021 but fully recovered by spring 2021. Among women with no children in the household, life satisfaction changed relatively little during 2020, declined moderately in January 2021 and increased to slightly above the pre-pandemic baseline in September 2021. Nevertheless, even in the

historical peak times of the pandemic, mothers consistently show higher life satisfaction than women without children in the household. By September 2021, mothers' life satisfaction had recovered, and childless women exhibited an even higher level of life satisfaction than before the pandemic.

Among men, the three groups – fathers with young children, fathers with older children, and men without children in the household – differ considerably in their level of life satisfaction during the pandemic (Panel B). At baseline, men with children have higher levels of life satisfaction than men without children. At all times during the pandemic, fathers with small children reported higher life satisfaction than fathers with older children or men without children. At all times except for the peak of the second lockdown in January 2021, men without children were the worst off. By September 2021, the gap between men with and without children was larger than before the pandemic. Men with young children were not affected by the lockdown in spring 2020 or in winter 2021: their level of life satisfaction remained effectively constant. In sharp contrast, fathers with older children show a significant decline throughout the pandemic, particularly during the peak of the second wave in January 2021. The satisfaction of men without children also declined throughout the pandemic, but the decline is not statistically significant at all times, and the point estimates are mostly smaller than those for fathers of older children.

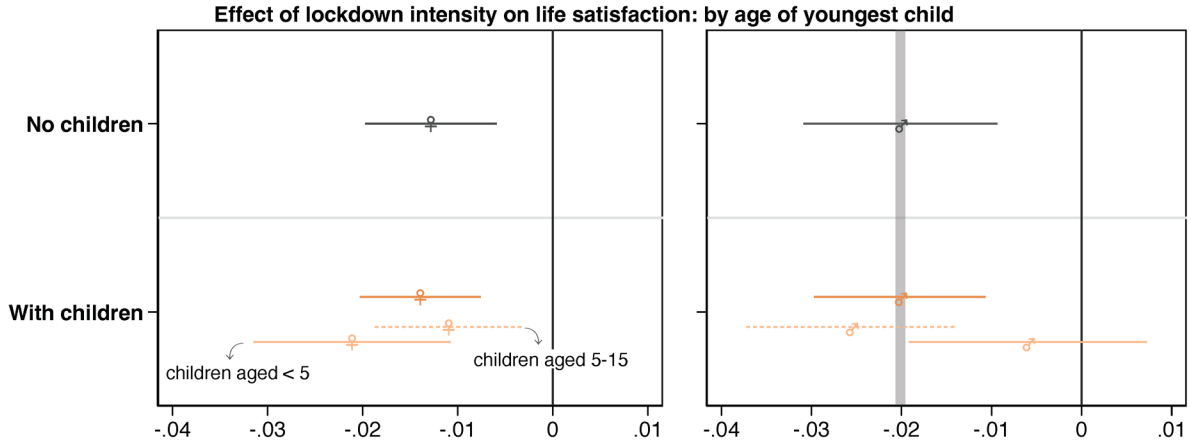
Life satisfaction and lockdown intensity

The historical period partly mirrors lockdown intensity (see *Figure 1*). However, to determine whether individuals with and without children are actually differently affected by lockdown intensity, we now explicitly investigate this association.

Figure 3 displays the effect of lockdown intensity by parental status and age of children from panel regression models with fixed effects at the individual level, separately for men and women. The thick gray line is the effect among childless women and men as a reference. We see that for all groups, a higher lockdown intensity was generally paralleled by stronger declines in life satisfaction. The negative effect of the COVID-19-induced lockdowns is virtually the same for women with and without children. Within the group of mothers, the point estimates suggest that mothers of young children were hit hardest by lockdowns, but the difference is not statistically significant (p=.1). Among men, the effect of lockdown intensity is also equal for those with and without children. There are, however, substantial differences by

child's age: fathers of older children were severely affected by lockdowns, whereas the life satisfaction of fathers with young children does not significantly differ from the pre-pandemic situation, irrespective of lockdown intensity (the differences in effect between fathers of older and younger children is statistically significant, p<.05). Additional analyses indicate that partners do not seem to buffer the negative effect of lockdown intensity on life satisfaction and that single mothers, for which one may have expected the largest effect, do not significantly deviate from partnered mothers (see *Figure S1* in the Appendix).

Figure 3: Effect of lockdown intensity by parental status and age of children. The thick gray line is the effect among childless women and men as a reference. The results are from panel regression models with fixed effects at the individual level. Lockdown intensity is captured by Google mobility data.



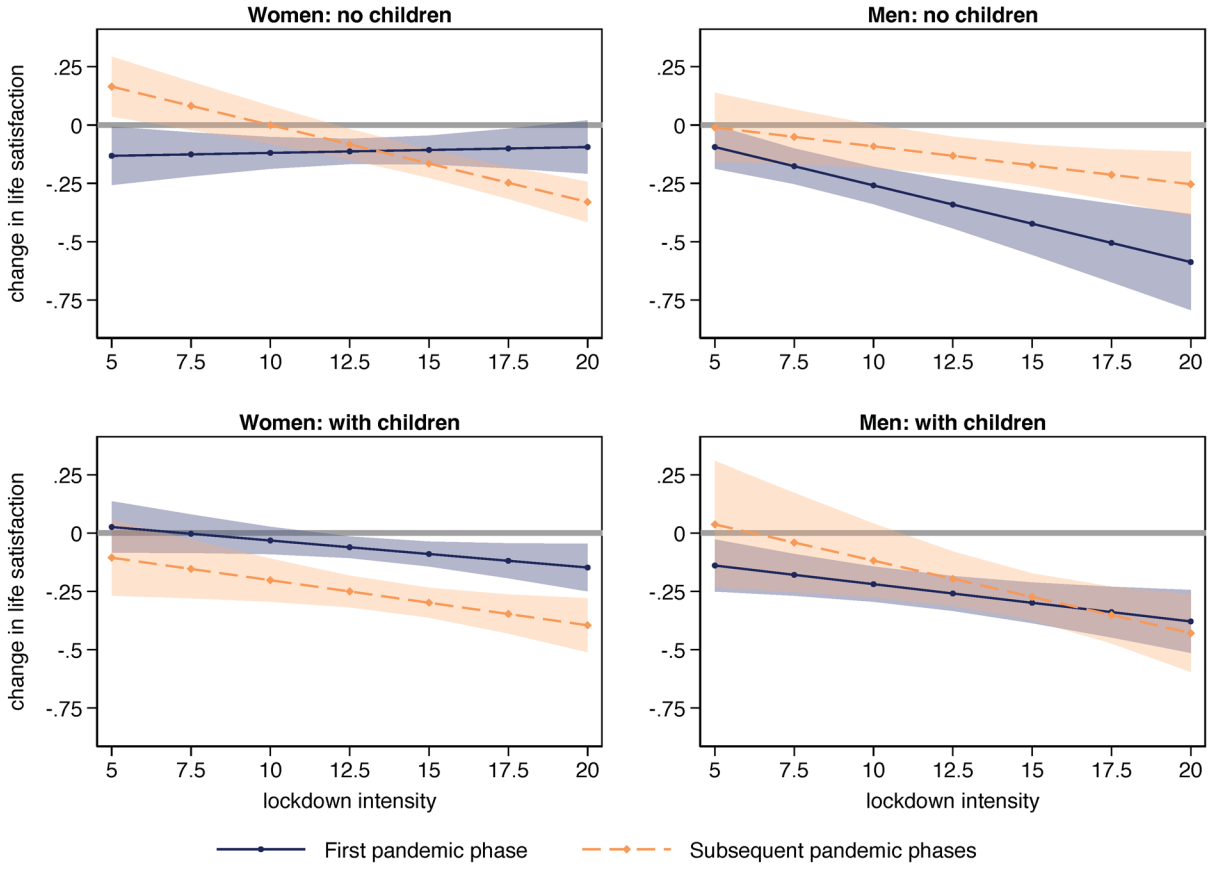
Life satisfaction by lockdown intensity across different phases of the pandemic

Figure 4 combines the analyses of changes in life satisfaction over the course of the pandemic with lockdown intensity. We distinguish two pandemic phases. The first phase lasted from the onset of the pandemic until September 2020, that is, until after the first lockdown wave, and included the relatively close-to-normal situation in summer 2020. The subsequent increase in COVID-19 cases and lockdown intensity in the fall of 2020 defines the beginning of the later phase, whose 'end' in September 2021 was defined by the last survey interview entering our analysis. The x-axis represents the observed lockdown intensity during our period of observation, whereas the y-axis represents predicted changes in life satisfaction relative to the pre-pandemic baseline.

Again, we first consider women before turning to men. For all women, irrespective of their parental status, predicted life satisfaction is lowest for high lockdown intensities during the later pandemic phase. For women without children, we see a generally lower life satisfaction during the first pandemic phase than at baseline; however, their life satisfaction is unrelated to the specific level of lockdown intensity. For women without children in the second phase, there was a strong negative effect of lockdown intensity. Particularly for mothers, our results indicate an accumulation of the negative effect of the pandemic and lockdown intensity, as point estimates of their life satisfaction are consistently lower in the subsequent pandemic phases than in the first phase. Furthermore, the lowest values are predicted for intense lockdowns during the subsequent phases, especially for mothers with young children.

Among men, we see that those without children actually fared worse during the first than the subsequent phases. Fathers of older children also suffered relatively sharply from intense lockdowns, but there is no difference between lockdowns during the first and subsequent pandemic phases. The only group of men who were not negatively affected by the lockdowns in any phase is fathers of young children. Even at the highest lockdown intensities, the predicted change in satisfaction compared to baseline is practically zero for the earlier or the later phases.

Figure 4: Effect of lockdowns during the first and subsequent phases of the pandemic. Estimates represent the predicted change in life satisfaction relative to the pre-pandemic baseline. The results are from panel regression models with fixed effects at the individual level. Lockdown intensity is captured by Google mobility data.



The first pandemic phase is here defined as the time until (including) Septemner 2020. The subsequent phases mean all time after that.

6. Discussion

Contributing to the broader literature investigating the role of children in adults' well-being, the present study set out to provide longitudinal evidence on the dynamics of life satisfaction during the COVID-19 pandemic in the UK. Drawing on several waves of panel data covering a period from the pre-pandemic baseline situation (that is, 2019) through September 2021, we aimed to assess initial reactions and processes of adaptation and accumulation over the course of the pandemic. Overall, our findings provide only limited support for our three main hypotheses:

First, the *Initial Lockdown Hypothesis* predicted that parents' life satisfaction in particular should have declined during the first pandemic wave and ensuing lockdown due to

a sharp increase in domestic demands. However, there is no clear evidence for this hypothesis. There was an initial decline in life satisfaction among mothers of young children but not among those of older children. Among men, there was an initial decline among those without children and among fathers of older children but not among fathers of young children.

The *Adaptation Hypothesis* predicted that parents would adapt faster to the new pandemic situation and fare better during later pandemic phases and lockdowns than during the initial phase. The *Accumulation Hypothesis* predicted that the strain resulting from lockdowns accumulates and therefore has a stronger negative effect on life satisfaction in the later pandemic phase. For women, our results indeed tend to support the *Accumulation Hypothesis*, and mothers in particular were shown to exhibit the lowest level of life satisfaction when lockdown intensity peaked in the later phase of the pandemic (that is, after September 2020), not in its earlier stage. Whereas mothers seemed to fare relatively well during the first lockdowns, recurrent experiences of lockdowns with closures of daycare facilities and schools seem to have exhausted mothers' resilience. This stronger decline among mothers during the second phase may be related to gender dynamics and the division of domestic work: Whereas men tended to increase their relative contribution to domestic duties at the beginning of the pandemic (e.g., Hudde et al. 2021), couples with children reverted to their pre-pandemic gender division of housework after the initial shock (Rodríguez Sánchez et al. 2021).

Among fathers, there is no clear evidence supporting either of our hypotheses. The negative effect that lockdowns had on their life satisfaction is the same during the first and subsequent pandemic phases. However, one group is notable for not being negatively affected by the pandemic and the lockdowns: fathers of young children. A potential explanation for this rather surprising finding is that many of them may have perceived the lockdown-induced increase in their time spent at home as a welcome opportunity to enjoy more time with their toddlers and preschool children, which buffered the general, negative effect of the pandemic (see Kreyenfeld & Zinn, 2021, for a related discussion).

Like most research in the field, we were primarily interested in the effect of the pandemic, that is, how people's lives changed relative to their pre-pandemic baseline. However, for a full picture, one should not neglect absolute values. Mothers of young children experienced considerable declines in satisfaction during the pandemic, but they started from a higher pre-pandemic baseline level than mothers of older children or childless women. The greater decline among mothers of young children then erased their initial satisfaction

advantage, and all groups of women showed similar satisfaction levels by the end of the observation period. In absolute terms, the lowest levels of satisfaction over all groups and periods were reported for childless men during the first pandemic wave. Similarly, by the end of the observation period, childless men are the group that reports the lowest level of well-being.

The pandemic is ongoing, as are the accompanying policy measures of containment. It is therefore too early for final conclusions about the medium- or long-term effects of the pandemic. If the accumulation of stressors that we identified among mothers during the first one and a half years of the pandemic persists, their life satisfaction would further decline as the pandemic drags on. Future research should thus continuously trace changes in the well-being of women and men in different family situations.

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Appendix

Figure S1: Effect of lockdowns among the childless and parents, by partner status. The thick grey line is the effect among childless women and men respectively, as reference. Results are from panel regression models with fixed-effects at the individual level. Lockdown intensity is captured by Google mobility data.

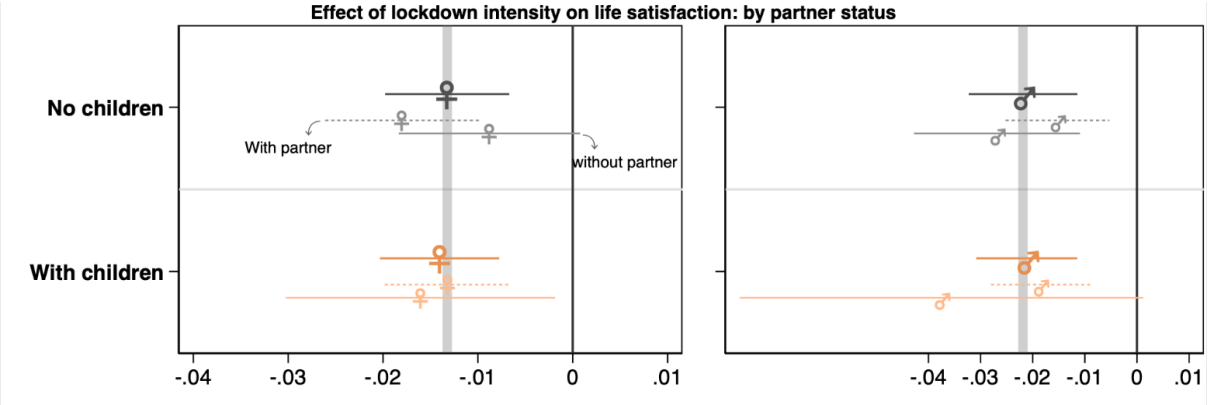

Table S1: Full table for results shown in Figure 2. Fixed effects regression model to estimates intra-individual changes in life satisfaction during the pandemic.

	Women			**Men**		
	No children	**Children age 5-15**	**Children age < 5**	**No children**	**Children age 5-15**	**Children age < 5**
Reference category: pre-pandemic baseline						
2020/5	-0.10	-0.08	-0.25	-0.51**	-0.48***	-0.04
	(0.08)	(0.07)	(0.14)	(0.16)	(0.14)	(0.16)
2020/7	-0.04	0.09	-0.22	-0.30*	-0.39**	0.03
	(0.10)	(0.08)	(0.14)	(0.15)	(0.14)	(0.23)
2020/9	-0.17*	0.07	-0.15	-0.18	-0.35**	0.20
	(0.08)	(0.08)	(0.14)	(0.11)	(0.12)	(0.18)
2020/11	-0.05	-0.16*	-0.35**	-0.12	-0.34**	0.01
	(0.08)	(0.07)	(0.12)	(0.10)	(0.11)	(0.18)
2021/1	-0.29***	-0.34***	-0.58***	-0.28**	-0.64***	-0.07
	(0.08)	(0.09)	(0.14)	(0.10)	(0.14)	(0.22)
2021/3	-0.03	-0.02	-0.34*	-0.24*	-0.27*	0.02
	(0.08)	(0.08)	(0.14)	(0.10)	(0.12)	(0.18)
2021/9	0.16*	-0.13	-0.24	-0.13	-0.31*	0.06
	(0.08)	(0.12)	(0.13)	(0.11)	(0.14)	(0.22)
Constant	4.77***	5.01***	5.28***	4.79***	5.19***	5.13***
	(0.06)	(0.05)	(0.08)	(0.08)	(0.09)	(0.15)
$N_{waves\ X\ ind.}$	19216	5537	2416	12649	3377	1537
$N_{individuals}$	2839	972	477	1895	595	306

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: the number of observations differ from those reported in Table 1 because observations with a survey weight of zero are not counted here.

Table S2: Full table for results shown in Figure 3. Fixed effects regression model to estimates the effect of changes in lockdown intensity on life satisfaction.

	Women	**Men**
Main effect hh composition, Reference: no children		
Children age 5 - 15	0.08	-0.17
	(0.10)	(0.18)
Children age < 5	-0.13	-0.13
	(0.15)	(0.16)
Interaction: hh composition # lockdown intensity		
No children # lockdown intensity	-0.01***	-0.02***
	(0.00)	(0.01)
Children age 5 - 15 # lockdown intensity	-0.01**	-0.03***
	(0.00)	(0.01)
Children age < 5 # lockdown intensity	-0.02***	-0.01
	(0.01)	(0.01)
Age	0.10	0.04
	(0.11)	(0.13)
Age squared	-0.00	-0.00
	(0.00)	(0.00)
Constant	2.39	4.11
	(2.22)	(3.05)
$N_{waves\ X\ ind.}$	27169	17563
$N_{individuals}$	3770	2461

Standard errors in parentheses

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: the number of observations differ from those reported in Table 1 because observations with a survey weight of zero are not counted here.

Table S3: Full table for results shown in Figure 4. Fixed effects regression model to adaptation or accumulation processes in the effect of lockdown intensity on life satisfaction.

	Women			**Men**		
	No children	**Children age 5-15**	**Children age < 5**	**No children**	**Children age 5-15**	**Children age < 5**
Main effect for phase, baseline: pre-pandemic						
First pandemic phase (May-September 2020)	-0.18	0.28*	-0.30	0.14	-0.04	0.22
	(0.16)	(0.13)	(0.28)	(0.14)	(0.17)	(0.20)
Subsequent pandemic phases (Sept. 2020 – Sept. 2022)	0.31	0.11	-0.34	0.13	0.30	0.04
	(0.17)	(0.19)	(0.34)	(0.19)	(0.26)	(0.35)
Interaction: Pandemic phase # lockdown intensity						
First pandemic phase # lockdown intensity	0.00	-0.02**	-0.00	-0.03***	-0.02	-0.02*
	(0.01)	(0.01)	(0.02)	(0.01)	(0.01)	(0.01)
Later pandemic phases # lockdown intensity	-0.03***	-0.02	-0.02	-0.02	-0.03**	-0.01
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Age	0.16	0.17	-0.45	-0.13	0.16	0.92*
	(0.12)	(0.17)	(0.28)	(0.18)	(0.36)	(0.44)
Age squared	-0.00	-0.00	0.01*	0.00	-0.00	-0.01*
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Constant	-3.63	-2.55	5.66	4.20	0.14	-17.45
	(3.00)	(4.00)	(5.66)	(4.64)	(7.20)	(10.00)
$N_{waves\ X\ ind.}$	19216	5537	2416	12649	3377	1537
$N_{individuals}$	2839	972	477	1895	595	306

Standard errors in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note: the number of observations differ from those reported in Table 1 because observations with a survey weight of zero are not counted here.