HEALTH AND FAMILY FUNCTIONING ACROSS THE PANDEMIC

Enduring COVID-19 Lockdowns: Risk versus Resilience in Parents' Health and Family Functioning Across the Pandemic

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Abstract

Have the demands of the COVID-19 pandemic risked declines in parents' health and family functioning, or have most parents been resilient and shown no changes in health and family functioning? Assessing average risk versus resilience requires examining how families have fared across the pandemic, beyond the initial months examined in prior investigations. The current research examines changes in parents' health and functioning over the first 1.5 years of the pandemic. Parents ($N = 272$) who had completed general pre-pandemic assessments completed reassessments of psychological/physical health, couple/family functioning, and parenting within two mandatory lockdowns in New Zealand: at the beginning of the pandemic (26 March–28 April 2020) and 17 months later (18 August–21 September 2021). Parents exhibited average declines in psychological/physical health (greater depressive symptoms; reduced well-being, energy and physical health) and in couple/family functioning (reduced commitment and family cohesion; greater problem severity and family chaos). By contrast, there were no average differences in parent-child relationship quality and parenting practices across lockdowns. Declines in health and couple/family functioning occurred irrespective of pre-pandemic health and functioning, but partner support buffered declines in couple/family functioning. The results emphasize that attending to the challenges parents and couples face in the home will be important to mitigate and recover from the impact of the pandemic on parents' and children's well-being.

Keywords: COVID-19 pandemic, risk and resilience, health, couple and family functioning, parenting, partner support, social support

Enduring COVID-19 Lockdowns: Risk versus Resilience in Parents' Health and Family Functioning Across the Pandemic

The COVID-19 pandemic and lockdowns have created cumulative stressors for families, including economic insecurity, loss of social support, and balancing childcare, schooling and work at home. As the pandemic emerged, experts forecasted a rise in mental health issues (Holmes et al., 2020), and scholars warned that the challenges of the pandemic would risk couple and family well-being (Pietromonaco & Overall, 2020; Prime et al., 2020). Providing evidence of these risks, parents in particular reported heightened stress and depression along with declines in well-being in the initial months of the pandemic (see Aknin et al., 2022; Feinberg et al., 2022; Westrupp et al., 2021). Increases in parents' distress, in turn, have been linked to harsher, less responsive parenting (e.g., Brown et al., 2020; McRae et al., 2021). Some studies assessing relationship functioning before and in the initial stages of the pandemic also provided evidence that couples' relationship satisfaction declined (Haydon & Salvatore, 2022; Schmid et al., 2020), and greater stress during lockdowns damaged couple and family functioning (e.g., Overall et al., 2022).

Yet, resilience experts have argued that most people will sustain health and well-being (Chen & Bonanno, 2020), and thus parents and families may show a pattern of stress-resistance involving no changes in health or family functioning despite the challenges of the pandemic (Chen & Bonanno, 2020; Masten, 2018). Indeed, a recent review concluded that people across the world had shown resilience as evident by no declines in well-being in the early months of the pandemic (Aknin et al., 2022). Similarly, some studies have found no differences in couple or parent-child relationship quality assessed prior to and at the start of the pandemic (Feinberg et al., 2022; Helland et al., 2021; Williamson, 2020).

One reason for this mixed picture of risk versus resilience is because the available evidence involves examining changes in health and family functioning within the early stages

of the pandemic. Risk of declines in health and functioning may not be fully evident early in the pandemic as most families were able to meet the challenges of a novel external threat, but may more clearly emerge as families endure pandemic-related difficulties across time. In the current study, we examined changes across the first 1.5 years of the pandemic to examine average *risk* (declines in parents' health and family functioning) versus *resilience* (no changes in health and functioning). We assessed change in three domains that capture the range of outcomes examined in prior investigations of the effects of the pandemic on parents, couples, and families: (1) psychological/physical health, (2) couple/family functioning, and (3) parenting. We directly compare parents' ($N = 272$) functioning within each domain across two mandatory lockdowns in New Zealand (NZ) that occurred at the beginning of the pandemic (Lockdown 2020, 26 March–28 April) and then 17 months later (Lockdown 2021, 18 August–21 September). Accounting for the corresponding pre-pandemic variables, we test whether parents' psychological/physical health, couple/family functioning, and parenting within lockdowns became worse (risk) or remained the same (resilience) over the course of the pandemic. We also test whether any differences across lockdowns were moderated by pre-pandemic health and functioning or partner support.

Risk versus Resilience across Lockdowns

Understanding average risk versus resilience has important practical implications. If the pandemic has increased the risk of declines in parents' health and family functioning, recovering from the pandemic will need to focus on restoring family health and well-being. But, if most parents and families are resilient and show no change in health or family functioning, pandemic recovery may instead involve pushing most families to endure further challenges to rebuild from economic, social, and educational losses. Yet, given the mixed evidence, and that prior investigations have captured the early stages of the pandemic, conclusions about average risk versus resilience are premature.

Understanding average risk versus resilience has equally important theoretical implications. Prominent models within relationship, family, and developmental science emphasize that external stress undermines the capacity to sustain adaptive processes in family relationships, which can damage couple and parent-child relationship quality (e.g., Conger & Conger, 2002; Karney & Bradbury, 1995; Prime et al., 2020). To illustrate, we summarize findings from the first lockdown of the current study that occurred at the beginning of the pandemic (Lockdown 2020). Supporting key assumptions about the way stress disrupts family functioning, parents' greater external stress and psychological distress predicted poorer health, couple/family functioning, and parenting (Low et al., 2022; McRae et al., 2021; Overall et al., 2022).

These models of family stress generally assume that ongoing challenges that accumulate across time, rather than temporary stressors that dissipate, should pose greater risk. Accordingly, risk of declines in health and functioning may be greater after the initial stages of the pandemic. Indeed, although we observed variance in outcomes during the first lockdown, we acknowledged that the effects appeared to occur in a context of general resilience in which families were functioning fairly well (Low et al., 2022; McRae et al., 2021; Overall et al., 2022). We noted, however, that the early stages of the pandemic may have minimized risk and been counteracted by potential benefits, such as lockdowns providing opportunities for families to spend more quality time together (Pietromonaco & Overall, 2021), and to attribute any difficulties to the hopefully temporary threat of the pandemic (Neff et al., 2021).

Consistent with the notion that ongoing stress will have more detrimental effects, we expected that the relative risks would grow over time as parents and families had to endure a range of difficulties caused by the ongoing pandemic. The challenges of managing work, schooling, and parenting during lockdowns may have depleted parents' psychological

reserves, and the prolonged social and economic disruptions likely placed families under increasing strain. Although families in our study experienced times of lower restrictions, they nonetheless faced ongoing challenges associated with short-term lockdowns to contain sporadic outbreaks along with the economic repercussions of the pandemic. Moreover, a resurgence of COVID-19 in their community returned families to confined quarantine 1.5 years into the pandemic (Lockdown 2021). These data provide the opportunity to test whether parents' psychological/physical health, couple/family functioning, and parenting quality declined over the first 1.5 years of the pandemic (from Lockdown 2020 to Lockdown 2021).

Alternatively, perhaps the risk of poor outcomes dissipated across time as parents and couples learned to cope with the 'new normal' of pandemic life. Critically, testing resilience, as indexed by no changes in health and functioning, also requires examining outcomes across the pandemic. Models focusing on psychological adjustment, for example, specify resilience as occurring when mild initial disruptions quickly dissipate and functioning quickly returns to typical levels (Chen & Bonanno, 2021; Bonanno, 2005). Models of family resilience similarly emphasize the need to assess outcomes across time because resilience unfolds as parents enact key skills and resources that help them adapt to family stress (e.g., Masten, 2018; Conger & Conger, 2002). Stress inoculation models also suggest that couples who effectively cope with manageable stressors early in marriage are more likely to be resilient to stress later in marriage (Neff & Broady, 2011). Thus, assessing resilience requires going beyond the early stages of the pandemic to test whether parents maintain—show no changes in—health and functioning as they have endured many months of the pandemic.

Moderators of Risk versus Resilience

Our primary aim was to examine average risk versus resilience. In secondary models, we tested two potential moderators of changes in health and functioning. First, stress and resilience models emphasize that relative risk versus resilience will be shaped by pre-existing

vulnerabilities (also Pietromonaco & Overall, 2021; Prime et al., 2020). Parents experiencing more difficulties prior to the pandemic are likely more vulnerable to declines in health and functioning (Conger & Conger, 2002; Karney & Bradbury, 1995), whereas parents who entered the pandemic with better health and functioning may be more resilient (Chen & Bonnano, 2020; Conger & Conger, 2002; Masten, 2018). However, the role of pre-existing vulnerabilities may generally be stronger in studies outside the context of a uniform challenge that poses considerable difficulties to most families (see Fosco et al., 2021).

Second, key relational processes during lockdown may reduce the risk of poor outcomes and promote resilience. Theories and research examining how people sustain health and relationships when facing stressful contexts identify perceived support as a principal protective factor. Greater perceived support from partners helps downregulate distress, thereby promoting health and well-being (Cohen & Wills, 1985; Conger & Conger, 2002; Pietromonaco & Collins, 2017). These health benefits arise because perceived support enhances relationship closeness and security, and protects against couples' difficulties (e.g., Cutrona et al., 1997; Overall et al., 2010; Sullivan et al., 2010). Accordingly, support is theorized to be critical in sustaining relationship quality during the pandemic (Pietromonaco & Overall, 2021) and has been a key focus of pandemic-related research. Initial studies show that perceived partner support predicted better psychological health and couple and parenting outcomes during the early months of the pandemic (Brown et al., 2020; Donato et al., 2021; Holmstrom et al., 2021; McRae et al., 2021; Ogan et al., 2021; Randall et al., 2021). We extend these findings by testing whether partner support helped sustain parents' health and functioning across the first 1.5 years of the pandemic (from Lockdown 2020 to 2021).

Current Research

The current research examined whether the first 1.5 years of the COVID-19 pandemic was characterized by average declines (risk) versus no change (resilience) in parents' health

and family functioning. We leveraged an ongoing family study in which parents had completed assessments of psychological/physical health, couple/family functioning, and parenting prior to the pandemic. Parents completed repeat assessments during two lockdowns involving mandatory home confinement: at the start of the pandemic (Lockdown 2020, 26 March–28 April) and 17 months later (Lockdown 2021, 18 August–21 September). Accounting for the corresponding pre-pandemic variables, our primary aim was to test whether psychological/physical health, couple/family functioning, and parenting declined (risk) or remained stable (resilience) from Lockdown 2020 to Lockdown 2021 (see <https://osf.io/rv8f4> for pre-registration). Secondary analyses tested whether any declines in health and functioning were (1) greater for parents entering the pandemic with poorer health and functioning, but (2) buffered for parents who perceived greater partner support during lockdowns (see <https://osf.io/4pefz>).

Method

Participants

Prior to the pandemic, 237 mixed-gender couples who lived together in NZ and were parents of a 4–5-year-old child (who was the target of all parenting measures) completed a range of health, couple/family functioning, and parenting assessments. The focal child age range related to the pre-pandemic study aims (see Supplemental Material [SM]), and produced a similar parenting context involving managing early schooling at home during lockdowns. Parents who continued to live together in NZ ($N = 468$) were invited to complete an online questionnaire during the first COVID-19 Level 4 Lockdown (26 March–28 April, 2020) in which families were legally required to stay within their household. All schools and businesses were closed, except for essential services (e.g., health services, grocery stores), which one person per household could utilize under strict distancing protocols. The questionnaire was sent two weeks into the lockdown and available to complete until the end

of the Level 4 lockdown (between 8 and 27 April, 2020). The Lockdown 2020 sample included 365 parents.

We invited parents who completed the Lockdown 2020 assessment to complete another assessment during the Level 4 lockdown in 2021 (17 August–21 September, 2021) using the same measures and procedures. Parents who had separated ($N = 8$) or whose children were living elsewhere ($N = 2$) were excluded. The final sample was 272 parents (153 cisgender women, 119 cisgender men), including 216 parents from the same family (108 couples). At the pre-pandemic assessment, parents were on average 37.04 years old ($SD = 4.94$, range = 24–55) and involved in long-term ($M = 11.64$ years, $SD = 4.65$) cohabiting (88% married) relationships with 2.23 children ($SD = .84$; see Footnote 2). Participants identified as Māori (5.9%), Pacific Nations (4.4%), Indian (4.8%), non-NZ European (10.0%), Asian (10.7%), NZ European/Pākehā (60.1%), and Other (4.1%). Parents covered a range of income brackets [per annum NZD; 30.6% < 40,000, 12.2%, 41–60,000, 16.2% 61–80,000, 16.6% 81–100,000, 24.4% > 100,000]. Attrition analyses (see SM) revealed no differences in pre-pandemic or Lockdown 2020 measures between the final sample and parents who did not complete both lockdown assessments.

Procedure

The study was approved by the University of Auckland. Prior to the pandemic, all parents had completed an initial assessment, and 109 parents had completed a second pre-pandemic assessment, which included self-report measures of health, couple/family functioning, and parenting. We used the most recent pre-pandemic measures of these outcomes as baseline pre-pandemic assessments, which was on average 208 days ($SD = 126$) before the Lockdown 2020 assessment. Participants completed the same measures during both lockdowns along with measures of partner support. Parents received \$NZ25 for each lockdown assessment.

Measures

We comprehensively measured psychological/physical health, couple/family functioning, and parenting with well-established scales that capture both health and well-being as well as distress and difficulties. See SM for further details, including analyses illustrating measurement invariance across lockdown assessments in couple/family functioning and parenting measures. Table 1 presents descriptive statistics and reliabilities. Items were averaged unless noted.

Psychological/Physical Health

Depressive symptoms. Prior to the pandemic, participants completed the 20-item Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977), which assesses the frequency of depressive symptoms during the past week (e.g., “I felt depressed”; 0 = *Rarely or none of the time (less than one day)* to 3 = *Most or all of the time (5-7 days)*). During the lockdowns, we used the 10-item version of the CES-D (Andresen et al., 1994). Participants rated each item according to how they felt and behaved during the lockdown (e.g., “I felt depressed”; 0 = *Rarely or none of the time (less than one day per week)* to 3 = *Most or all of the time (5-7 days per week)*). We generated equivalent pre-pandemic and lockdown assessments by summing the items included in the 10-item CES-D.

Participants also completed measures from the RAND-36 Item Health Survey (Ware & Sherbourne, 1992). In pre-pandemic assessments, participants reported their experiences over the past four weeks. In lockdown assessments, participants reported their experiences *during* the lockdown. Items were recoded to 0-100 scales. Higher scores reflect better health.

Emotional well-being. Participants completed five items assessing well-being (e.g., “felt calm and peaceful”; 1 = *None of the time*, 5 = *All of the time*).

Energy. Participants rated four items assessing energy (e.g., “felt full of life”) versus fatigue (e.g., “felt worn out”; reverse-coded; 1 = *None of the time*, 5 = *All of the time*).

General Health. Physical health was assessed with five items such as “In general, would you say your health is ...” (1 = *Poor*, 5 = *Excellent*), and “I seem to get sick a little easier than most people” (reverse-coded; 1 = *Definitely false*, 5 = *Definitely true*).

Couple/Family Functioning

Relationship Satisfaction and Commitment. Participants rated items from Rusbult and colleagues’ (1998) investment scale to assess their current levels of relationship satisfaction (e.g., “I feel satisfied with our relationship”) and commitment (e.g., “I want our relationship to last a very long time”) at each assessment.

For all other scales, participants rated general experiences in pre-pandemic measures, but rated experiences specific to the lockdown period in lockdown measures (see SM).

Relationship Problems. Participants rated the severity of 27 common problems (e.g., communication, showing affection, solving problems, power struggles; 1 = *not a major problem*, 7 = *major problem*; Geiss & O’Leary, 1981). Items were summed.

Family Chaos was assessed with 12 items (e.g., “there often has been a fuss going on at our home”, “we are usually able to stay on top of things” [reverse-scored]; 1 = *not at all like your home*, 7 = *very much like your home*; Matheny et al., 1995).

Family Cohesion. Participants rated 5 items assessing family cohesion (e.g., we have ... “felt a sense of togetherness”, “supported and helped one another”; 1 = *strongly disagree*, 7 = *strongly agree*; Moos & Moos, 1981).

Parenting

Using the name and birth date of the target child, parents were reminded to complete the parenting measures with regard to the child assessed before the pandemic.

Parent-Child Relationship Quality. Parents rated 10 items adapted from prior measures of facets of parent-child relationship quality (Le & Impett, 2016; Smith & Krohn,

1995). Parents rated their current parent-child relationship quality at each assessment (e.g., “I feel satisfied with my relationship with my child”, 1 = *Strongly disagree*, 7 = *Strongly agree*).

Warm/Responsive and *Harsh Parenting* were assessed using the Parenting Styles and Dimensions Questionnaire (PDSQ-Short Version; Robinson et al., 2001). Nine items assessed warm/responsive parenting (“I am responsive to my child’s feelings or needs”; 1 = *Never*, 5 = *Always*). Four items assessed harsh parenting (“I yell or shout when my child misbehaves”). In pre-pandemic assessments, parents rated their parenting in general. In lockdown assessments, parents rated their parenting *during* the lockdown.

Perceived Partner Support

During each lockdown, participants rated how often their partner had behaved in supportive ways: “listened to your thoughts and feelings”, “given you support”, “offered you encouragement”, “helped you without being asked”, “expressed appreciation for you”, and “generally cared for and supported you” (1=*Never*, 5=*Always*). As in prior investigations of partner support during the pandemic (e.g., Brown et al., 2020; Donato et al., 2021; McRae et al., 2021; Ogan et al., 2021; Randall et al., 2021), this global assessment captures how much partners generally behaved in supportive ways shown to promote personal and relationship well-being (e.g., Cutrona et al., 1997; Overall et al., 2010; Sullivan et al., 2010).

Analytic Strategy

Pre-pandemic and lockdown assessments of most measures are not directly comparable because the lockdown assessments were worded specific to the lockdown period, whereas most pre-pandemic measures asked participants to rate general experiences and behaviors (see exceptions noted in Table 1). Additionally, the pre-pandemic measures were collected at varying time points prior to the pandemic. We thus focused on assessing change across the pandemic (differences between Lockdown 2020 to Lockdown 2021), which could be equivalently tested across all outcomes because health and functioning within each

lockdown were directly comparable and the time between assessments was uniform across the sample. By controlling for pre-pandemic outcomes, we ruled out that any differences across the pandemic are simply the continuance of relative pre-pandemic differences in health and functioning.

All analyses involved multilevel models to account for the dependencies arising from (1) 216 parents coming from the same family (108 couples), and (2) the two lockdown assessments. Thus, data from each participant ($N = 272$) was nested within each family (with 56 participants whose partners did not complete lockdown assessments missing partner data) and time of assessment (Lockdown 2020 and Lockdown 2021). The primary analyses tested whether health and functioning declined (risk) or remained the same (resilience) over the pandemic by regressing the repeated lockdown assessments of each outcome on (1) time of assessment ($-1 = \text{Lockdown 2020}$, $1 = \text{Lockdown 2021}$), which directly tests whether levels in each outcome differed significantly across the two lockdowns (labelled Differences across Lockdowns in Tables 2-4), and (2) the corresponding pre-pandemic outcome variable, to separate lockdown differences from the continuance of relative pre-pandemic differences in each outcome. See SM for annotated syntax and <https://osf.io/v2q78/> for all data and syntax.

Our first secondary analyses tested whether differences in health and functioning across lockdowns were moderated by pre-pandemic health and functioning by adding to the primary model the Difference across Lockdowns X Pre-pandemic Outcome interaction (see SM for annotated syntax). Given the number of analyses and overall null results (discussed below), we present the full results in the SM.¹ We then tested the potential moderating role of perceived support during the lockdowns by adding two additional effects into the primary

¹ We also ran exploratory analyses testing whether differences across the lockdowns depended on the reported financial, resources, or psychological impact of the pandemic (see <https://osf.io/v2q78/>). Controlling for pandemic impact did not change the significant differences in Tables 2-4. Moreover, only 6 of 36 interactions were significant ($p < .05$), which given the number of exploratory tests provides little evidence that average risk versus resilience depended on perceived pandemic impact.

model: (1) the main effect of perceived partner support, and (2) the Difference across Lockdowns X Partner Support interaction, which tests whether partner support predicted differences in health and functioning across lockdowns (see SM for annotated syntax). Tables 2-4 (Model 2) presents the results. For significant interactions, Table 5 presents the differences across lockdowns for high (+1 SD) versus low (-1 SD) levels of partner support.

Finally, our original pre-registered strategy involved analysing each separate measure within each domain—psychological/physical health, couple/family functioning, and parenting. This strategy is consistent with how each measure is typically used and provides clear effects for each construct, which may be of differential relevance to scholars, practitioners, and other pandemic-related investigations. Nonetheless, the measures within each domain represent related indices, were intended to provide overall assessments of each domain, and were not expected to produce differential patterns. To test whether the effects were equivalent across measures within each domain, and provide an overall assessment of the effects for each domain, we conducted additional analyses nesting measures within each domain. We rescored some measures to make all measures equivalent within each domain, expanded the multilevel models to treat measures as repeated assessments within each domain, and added contrast effect codes to test whether lockdown differences were consistent across measures within each domain (see SM5 for full details). No differences across measures emerged (see SM5). Thus, we provide the estimates from nested models testing overall differences in psychological/physical health, couple/family functioning, and parenting (see bottom of Tables 2-4) to supplement conclusions based on the consistent effects across separate measures within each domain.

Results

Psychological/Physical Health

As shown in Table 2 (see Model 1), the bold coefficients testing the differences across

lockdowns show that, on average, parents reported greater depressive symptoms, and lower well-being, energy, and physical health, in Lockdown 2021 compared to Lockdown 2020. One significant interaction emerged in secondary analyses testing the moderating role of pre-pandemic health (see SM6): parents with higher, but not lower, pre-pandemic depressive symptoms showed increases in depressive symptoms across lockdowns. One significant interaction also emerged when examining the moderating role of partner support (see Table 2, Model 2): significant declines in emotional well-being occurred when partner support was low, but not high (see Table 5). Nested models testing differences across each indicator of psychological/physical health revealed there were no significant differences in any of the effects across measures (see SM5). Parents reported an overall decline in health (see bottom of Table 2), which was not moderated by pre-pandemic health (see SM6), but was buffered by greater partner support (see bottom of Table 2 and Table 5).

Couple/Family Functioning

Table 3 (Model 1) shows that, accounting for pre-pandemic couple/family functioning, relationship commitment and family cohesion significantly declined, and relationship problems and family chaos significantly increased, across lockdowns. These differences were not further moderated by pre-pandemic couple/family functioning (see SM6), but were buffered by perceived support (Table 3, Model 2): significant declines in commitment and family cohesion, and increases in relationship problems, occurred when partner support was low, but not high (see Table 5). Nested models revealed there were no significant differences in any of the effects across measures (see SM5) revealing an overall decline in couple/family functioning that was buffered by greater partner support (see bottom rows of Tables 3 and 5).

Parenting

There were no average differences in parenting outcomes across the two lockdowns

(Table 4, Model 1), lockdown differences were not moderated by pre-pandemic parenting (see SM6) or perceived partner support (Table 4, Model 2), and these null effects did not differ across measures (see SM5).²

General Discussion

The pandemic has caused significant disruptions to family life, raising concerns that the challenges of the pandemic risk declines in parents' health, couple and family functioning and parenting (Pietromonaco & Overall, 2021; Prime et al., 2020). Yet, as shown in other crises, people are resilient, generating hope that most parents and families would navigate the pandemic with no change in health and family functioning (Chen & Bonanno, 2020).

Answering the question of average risk versus resilience requires assessing how parents and families have fared across the course of the pandemic, rather than only in the initial months as has been captured by prior research. The current study provides the first examination of changes in parents' health and family functioning over the first 1.5 years of the pandemic.

Parents who had completed general assessments before the pandemic completed repeat assessments of psychological/physical health, couple/family functioning, and parenting within two lockdowns involving mandatory home confinement: at the beginning of the pandemic (Lockdown 2020) and 17 months later (Lockdown 2021). We tested differences across the lockdowns controlling for pre-pandemic assessments to isolate changes across the pandemic from the continuity of relative differences prior to the pandemic. The results provided evidence of risk to psychological/physical health (greater depressive symptoms; reduced well-being, energy, and physical health) as well as risk to couple/family functioning (reduced commitment and family cohesion; greater problem severity and family chaos). By

² Mothers reported worse psychological/physical health than fathers, and parents who were older or had more children reported better health, couple/family functioning, and parenting. However, parents' gender, age or number of children did not moderate any of the differences across lockdowns.

contrast, suggesting a pattern of parenting resilience, no average changes occurred for parent-child relationship quality or warm/responsive and harsh parenting.

The results provide evidence that enduring the first 1.5 years of the pandemic and lockdowns has posed risks to parents' psychological/physical health and couple/family functioning. The significant effects ranged from .13 to .29. Yet, even small drops in psychological health detrimentally impact people's daily lives, risk poorer long-term outcomes, and carry significant economic cost (Cuijpers et al., 2007, 2013). Similarly, reduced couple and family functioning forecast poor outcomes, including lower child well-being and adjustment (Marsh et al., 2020; van Eldik et al., 2020). Declines in health and functioning also may grow as parents continue to face pandemic-related challenges. Thus, these small-medium effects are explanatory and practically meaningful given the ensuing consequences likely accumulate over time (Funder & Ozer, 2019).

Despite consistent evidence of declines in psychological/physical health and couple/family functioning, parent-child relationship quality and parenting behavior were resilient with no average differences across time. This intriguing pattern may indicate that, in the face of pandemic challenges, parents may be able to better protect relationships with their children than those with their partners. Yet, parents' relationship as a couple and their ability to work together to provide cohesive, stable home environments critically determine both parental responsiveness and child adjustment (Marsh et al., 2020; van Eldik et al., 2020). Accordingly, by undermining parents' psychological health and couple/family functioning, the pandemic will indirectly risk parenting quality and child well-being (Prime et al., 2020; also Fosco et al., 2021). Moreover, increasing evidence indicates that improving couples' relationships, rather than just parenting skills, improves parenting and child adjustment (e.g., Doss et al., 2020; Lavner et al., 2019). Thus, protecting against declines in parents' health and couple/family functioning will likely enhance parenting and child outcomes.

Notably, the results of secondary analyses suggested that the pandemic and lockdowns fairly uniformly affected families, regardless of their relative health and functioning prior to the pandemic. Although the longitudinal design inevitably restricted sample size and power for these tests, the findings may indicate that the pandemic, and perhaps lockdowns in particular, create pressures on parents' health and couple/family functioning by generating stress within the home that is difficult to manage, even for the most well-functioning parents prior to the pandemic. The findings also align with results from earlier stages of the pandemic in which family and parenting disruptions rather than existing vulnerabilities in family functioning predicted poorer child adjustment (Fosco et al., 2021).

Secondary analyses also provided evidence that within-couple processes may promote resilience. As shown in the early stages of the pandemic, greater partner support was associated with better psychological/physical health, enhanced couple/family functioning, and more positive parenting outcomes (e.g., Donato et al., 2021; McRae et al., 2021; Ogan et al., 2021; Randall et al., 2021). Beyond these main effects, however, consistent moderation effects indicated that partner support buffered average declines in couple/family functioning across the lockdowns. There was also some evidence that partner support buffered the risk to psychological/physical health. This pattern suggests that partner support will likely alleviate some of the detrimental impacts of lockdowns, and aligns with the overall pattern across analyses that suggests that mitigating the risks of the pandemic requires attending to and easing the challenges parents and couples face in the home.

Caveats and Remaining Questions

The effects were consistent across the multiple measures of psychological/physical health, couple/family functioning, and parenting. Readers may wonder whether we should have adjusted for multiple tests, which is of particular concern in the context of publication bias when many tests are conducted, but only significant effects are reported. This concern

does not apply to our primary analyses because we present all pre-registered analyses across all outcomes assessed at both lockdowns that had been the focus of our examinations within the initial lockdown (Low et al., 2022; McRae et al., 2021; Overall et al., 2022; Waddell et al., 2021). Additionally, multiple tests are particularly relevant when only a few significant effects emerge and conclusions are made about specific effects or differentiated patterns across variables. We interpreted average risk versus resilience with regard to domains (rather than specific measures) that revealed consistent significant effects (psychological/physical health and couple/family functioning) versus no significant effects (parenting). Moreover, models nesting specific measures within domains illustrated that the effects did not differ within domains providing additional evidence for our conclusions.

Perhaps the differences across lockdowns are not due to the challenges of the pandemic, but represent inevitable declines in health and functioning. It is often assumed that couples' relationship quality typically declines. Yet, declines are not inevitable across a range of relational contexts, and many couples show stable trajectories, especially when relationship quality is initially high as was typical in our sample (see Proulx et al., 2017). Moreover, in the absence of stressful challenges, we would not expect average declines in psychological/physical health across 18-months. Additionally, neither theory nor prior research indicates that family cohesion and chaos will show average worsening across time, or that family-level functioning but not parenting would evince general declines. Although the lack of a "control" condition to compare changes in the absence of the pandemic restricts causal conclusions, the results provide evidence that the first 1.5 years of the pandemic has likely increased the risk of declines in parents' health and family functioning.

Lockdown assessments necessarily involved self-report measures. Self-report biases could exacerbate or reduce differences across lockdowns. Greater distress may bias perceptions of family functioning, but significant differences remained controlling for pre-

pandemic functioning (and pandemic impact; see Footnote 1) and such biases should also apply to reports of parenting, which illustrated no differences. Alternatively, perhaps parents are particularly hesitant to report poor behaviors and evaluations toward their children, and thus social desirability biases limit detection of differences in parenting. It is also possible that qualitative differences in health and functioning occurred. Our self-report assessments involved established scales used extensively to assess changes in levels of health and functioning. However, we could not establish measurement invariance across time for all scales (see SM) highlighting the possibility that differences across lockdowns could involve shifts in the experience or type of relationship problems and health symptoms within the unique context of the pandemic. Detailed item-level assessments are required to explore these possibilities, and may identify particular risks to health and family functioning. Assessing changes in objective assessments of parenting and family functioning will also be important to understand the specific types of risks to family functioning as the pandemic continues.

Sample characteristics also may have limited the reliability of moderation tests and generalizability of the results. Our sample included parents with a 5-7 year-old child at the time of lockdown, and thus captured parents within a similar, challenging family context (e.g., balancing childcare, schooling, and work at home). The average declines in health and family functioning may not generalize to couples without the same challenges (e.g., having older or no children). Conversely, our sample captured two-parent households who were willing to participate in an extensive family-based study. The resulting sample characteristics (e.g., dual-parent mixed-gender families, generally college educated parents, many who identify with the ethnic majority) may have aided resilience and produced smaller average declines. Additionally, the strict lockdowns were generally supported and bolstered national trust (Sibley et al., 2020), and government support was available to all NZ families who lost employment and income, which may have counteracted the challenges families faced. Larger,

more diverse samples within contexts of prolonged community transmission or lower financial support will likely reveal that the average declines shown here underestimate the risk for families who consistently faced greater adversity across the pandemic.

Conclusions

Have the ongoing demands of the COVID-19 pandemic and lockdowns risked declines in parents' health and family functioning or have most parents been resilient and shown no changes in health or family functioning? Assessing parents' health and functioning during mandatory lockdowns at the beginning of the pandemic (Lockdown 2020) and 17 months later (Lockdown 2021) revealed that enduring the first 1.5 years of the pandemic has been accompanied by average declines in parents' psychological/physical health and couple/family functioning. However, parent-child relationships and parenting practices were resilient with no average differences across time. Greater partner support also promoted resilience in couple/family functioning and (to a lesser extent) psychological health. The overall pattern of results indicate that emphasizing people's capacity for resilience may underplay the ongoing effects of the pandemic, particularly for parents who face challenges managing work, schooling, and family life. Thus, targeting the challenges families face in the home, and building the capacity for coparents to support one another, will be important for mitigating the effects of the pandemic on parents' and children's well-being.

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Table 1. Descriptive Statistics and Reliabilities

Measures	Possible Range	General Assessment Pre- Pandemic			Specific Assessment within Lockdown 2020			Specific Assessment within Lockdown 2021		
		Mean (SD)	Range	α	Mean (SD)	Range	α	Mean (SD)	Range	α
<i>Psychological/Physical Health</i>										
Depressive symptoms	0-30	6.46 (4.64)	0-28	.86	7.45 (5.11)	0-24	.83	8.62 (5.60)	0-25	.86
Emotional well-being	0-100	74.29 (15.66)	0-100	.85	74.80 (16.30)	25-100	.84	70.53 (17.96)	20-100	.86
Energy (Low Fatigue)	0-100	52.63 (18.10)	0-100	.83	54.69 (20.14)	0-100	.81	48.18 (20.19)	0-100	.85
General health	0-100	67.28 (18.74)	0-100	.79	70.17 (17.44)	20-100	.78	67.15 (18.54)	20-100	.81
<i>Couple/Family Functioning</i>										
Relationship Satisfaction	1-7	5.52 (1.26)	1-7	.92	5.37 (1.44)	1-7	.95	5.19 (1.54)	1-7	.96
Relationship Commitment	1-7	6.67 (0.74)	2.43-7	.90	6.58 (0.82)	2.71-7	.91	6.44 (1.00)	1-7	.94
Problem Severity	27-189	64.54 (21.49)	27-150	.91	55.03 (22.55)	27-142	.93	59.97 (26.12)	27-151	.94
Family Cohesion	1-7	6.06 (0.92)	1.80-7	.86	5.82 (1.07)	1.60-7	.88	5.46 (1.26)	1-7	.90
Family Chaos	1-7	3.24 (0.95)	1.08-6	.94	3.17 (1.03)	1-6.25	.94	3.44 (1.11)	1-6.92	.95
<i>Parenting</i>										
Parent-Child Relationship Quality	1-7	6.10 (0.76)	3.20-7	.84	5.80 (1.03)	2.30-7	.92	5.66 (1.05)	2-7	.92
Warm/Responsive Parenting	1-5	4.16 (0.49)	2.67-5	.81	3.95 (0.57)	2.22-5	.86	3.91 (0.57)	1.67-5	.86
Harsh Parenting	1-5	1.76 (0.51)	1-4	.74	1.66 (0.50)	1-3.75	.70	1.65 (0.49)	1-3.75	.70
<i>Lockdown Moderating Variable</i>										
Partner Support	1-5	-	-	-	3.34 (0.98)	1.33-5	.93	3.45 (1.00)	1-5	.94

Note. Pre-pandemic and lockdown assessments of most measures are not directly comparable because the lockdown assessments were worded specific to the lockdown period, whereas the pre-pandemic measures asked participants to rate general experiences and behaviors (with the exception of depressive symptoms, in which participants rated the presence of symptoms according to frequency per week, and couple relationship satisfaction and commitment, and parent-child relationship quality, in which participants rated their current evaluations). ‘-’ represents not measured at that assessment.

Table 2. Results from Multilevel Models Testing Differences in Psychological/Physical Health across Lockdowns (Model 1) and the Moderating Role of Partner Support (Model 2)

Predictors	Model 1					Model 2				
	B	95% CI	t	p	r	B	95% CI	t	p	r
<i>Depressive Symptoms</i>										
Difference across Lockdowns	.59	.12, 1.05	2.49	.013	.14	.64	.20, 1.08	2.86	.004	.16
Pre-Pandemic Depressive Symptoms	.43	.34, .52	9.49	<.001	.39	.40	.31, .48	8.90	<.001	.37
Partner Support						-.15	-.158, -.72	-5.23	<.001	.24
Difference across Lockdowns X Partner Support						-.34	-.77, .09	-1.58	.116	.07
<i>Emotional Well-being</i>										
Difference across Lockdowns	-2.16	-3.57, -.75	-3.01	.003	.17	-2.32	-3.67, -.98	-3.39	.001	.19
Pre-Pandemic Emotional Well-being	.44	.35, .52	10.25	<.001	.40	.40	.31, .48	9.29	<.001	.37
Partner Support						3.32	1.96, 4.69	4.78	<.001	.22
Difference across Lockdowns X Partner Support						1.43	.09, 2.76	2.09	.037	.10
<i>Energy</i>										
Difference across Lockdowns	-3.25	-4.86, -1.64	-3.97	<.001	.22	-3.41	-4.97, -1.85	-4.29	<.001	.24
Pre-Pandemic Energy	.47	.38, .55	10.71	<.001	.42	.44	.36, .53	10.14	<.001	.40
Partner Support						3.35	1.77, 4.93	4.17	<.001	.20
Difference across Lockdowns X Partner Support						.65	-.91, 2.21	.82	.414	.04
<i>Physical Health</i>										
Difference across Lockdowns	-1.49	-2.70, -.28	-2.43	.016	.14	-1.56	-2.76, -.36	-2.55	.011	.14
Pre-Pandemic Physical Health	.57	.51, .64	17.30	<.001	.59	.56	.50, .63	16.89	<.001	.59
Partner Support						1.37	.14, 2.60	2.19	.029	.11
Difference across Lockdowns X Partner Support						.01	-1.22, 1.22	.01	.999	.00
<i>Nested Model Testing Overall Differences in Health</i>										
Difference across Lockdowns	-2.19	-2.95, -1.44	-5.70	<.001	.16	-2.32	-3.06, -1.58	-6.16	<.001	.17
Pre-Pandemic Health	.57	.54, .61	30.94	<.001	.56	.56	.52, .59	30.19	<.001	.55
Partner Support						2.72	1.98, 3.45	7.26	<.001	.17
Difference across Lockdowns X Partner Support						.80	.07, 1.52	2.15	.032	.05

Note. Significant differences across lockdowns are shown in bold. For nested model testing overall differences in health, depressive symptoms was recoded and scored to match all other health measures: 0-100 with higher scores reflecting better health.

Table 3. Results from Multilevel Models Testing Differences in Couple/Family Functioning across Lockdowns (Model 1) and the Moderating Role of Partner Support (Model 2)

Predictors	Model 1					Model 2				
	B	95% CI	t	p	r	B	95% CI	t	p	r
<i>Relationship Satisfaction</i>										
Difference across Lockdowns	-.08	-.17, .01	-1.67	.096	.10	-.12	-.18, -.05	-3.50	.001	.20
Pre-Pandemic Relationship Satisfaction	.88	.81, .95	26.06	<.001	.78	.58	.52, .64	18.51	<.001	.65
Partner Support						.72	.65, .80	18.20	<.001	.64
Difference across Lockdowns X Partner Support						.06	-.00, .13	1.92	.056	.09
<i>Relationship Commitment</i>										
Difference across Lockdowns	-.07	-.14, -.01	-2.19	.029	.13	-.09	-.14, -.03	-3.13	.002	.19
Pre-Pandemic Relationship Commitment	.77	.69, .85	18.79	<.001	.66	.64	.56, .72	16.35	<.001	.60
Partner Support						.31	.25, .37	10.37	<.001	.44
Difference across Lockdowns X Partner Support						.09	.03, .14	3.15	.002	.15
<i>Relationship Problems</i>										
Difference across Lockdowns	2.39	.53, 4.26	2.53	.012	.15	3.06	1.63, 4.50	4.20	<.001	.24
Pre-Pandemic Relationship Problems	.63	.55, .71	15.73	<.001	.57	.39	.32, .47	10.68	<.001	.43
Partner Support						-12.59	-14.17, -11.00	-15.58	<.001	.57
Difference across Lockdowns X Partner Support						-1.68	-3.08, -.28	-2.36	.019	.11
<i>Family Cohesion</i>										
Difference across Lockdowns	-.18	-.28, -.09	-3.80	<.001	.22	-.20	-.29, -.12	-4.86	<.001	.27
Pre-Pandemic Family Cohesion	.60	.51, .69	12.91	<.001	.49	.41	.32, .50	8.67	<.001	.35
Partner Support						.48	.39, .57	10.57	<.001	.43
Difference across Lockdowns X Partner Support						.10	.03, .18	2.51	.012	.12
<i>Family Chaos</i>										
Difference across Lockdowns	.14	.06, .22	3.41	.001	.19	.14	.06, .22	3.74	<.001	.21
Pre-Pandemic Family Chaos	.67	.59, .74	17.23	<.001	.60	.61	.53, .69	15.31	<.001	.56
Partner Support						-.20	-.27, -.12	-5.11	<.001	.23
Difference across Lockdowns X Partner Support						-.05	-.12, .02	-1.40	.162	.07

*Nested Model Testing Overall Differences in
Couple/Family Functioning*

Difference across Lockdowns	-.11	-.15, -.07	-5.80	<.001	.15	-.13	-.16, -.09	-7.43	<.001	.19
Pre-Pandemic Couple/Family Functioning	.77	.74, .80	49.11	<.001	.71	.67	.64, .70	43.62	<.001	.67
Partner Support						.37	.33, .40	20.98	<.001	.39
Difference across Lockdowns X Partner Support						.07	.04, .10	4.39	<.001	.09

Note. Significant differences in outcomes across lockdowns are shown in bold. For nested model testing overall differences in couple/family functioning, relationship problems and family chaos were recoded and scored to match the other measures: 1-7 with higher scores reflecting better functioning.

Table 4. Results from Multilevel Models Testing Differences in Parenting across Lockdowns (Model 1) and the Moderating Role of Partner Support (Model 2)

Predictors	Model 1					Model 2				
	B	95% CI	t	p	r	B	95% CI	t	p	r
<i>Parent-Child Relationship Quality</i>										
Difference across Lockdowns	-.06	-.15, .02	-1.48	.139	.09	-.07	-.15, .01	-1.75	.082	.10
Pre-Pandemic Parent-Child Relationship Quality	.65	.56, .75	13.20	<.001	.51	.62	.53, .72	12.87	<.001	.50
Partner Support						.25	.17, .33	6.33	<.001	.28
Difference across Lockdowns X Partner Support						.06	-.02, .14	1.53	.126	.07
<i>Warm/Responsive Parenting</i>										
Difference across Lockdowns	-.02	-.06, .02	-1.13	.261	.07	-.03	-.06, .01	-1.44	.152	.09
Pre-Pandemic Warm/Responsive Parenting	.75	.67, .82	19.28	<.001	.67	.73	.65, .80	18.90	<.001	.66
Partner Support						.09	.05, .12	4.46	<.001	.22
Difference across Lockdowns X Partner Support						.02	-.03, .04	0.34	.734	.02
<i>Harsh Parenting</i>										
Difference across Lockdowns	-.01	-.04, .03	-.31	.76	.02	-.01	-.04, .03	-0.20	.839	.01
Pre-Pandemic Harsh Parenting	.59	.53, .66	18.12	<.001	.63	.59	.52, .65	18.02	<.001	.63
Partner Support						-.04	-.08, .01	-2.55	.011	.12
Difference across Lockdowns X Partner Support						.03	-.00, .06	1.71	.088	.08
<i>Nested Model Testing Overall Differences in Parenting</i>										
Difference across Lockdowns	-.02	-.05, .01	-1.52	.13	.05	-.03	-.06, .01	-1.76	.078	.06
Pre-Pandemic Parenting	1.04	1.01, 1.07	75.38	<.001	.92	1.04	1.01, 1.07	76.03	<.001	.93
Partner Support						.08	.05, .11	5.49	<.001	.15
Difference across Lockdowns X Partner Support						.01	-.02, .04	0.70	.485	.02

Note. For nested model testing overall differences in parenting, all measures were recoded and scored to match: 1-5 with higher scores reflecting higher quality parenting.

Table 5. Differences across Lockdowns At Low versus High Levels of Partner Support for Significant Interactions of Partner Support

Outcomes	Low (-1 SD) Partner Support					High (+1 SD) Partner Support				
	B	95% CI	t	p	r	B	95% CI	t	p	r
<i>Health Outcomes</i>										
Emotional Well-being	-3.73	-5.65, -1.82	-3.89	<.001	.22	-.92	-2.84, 1.01	-0.95	.343	.06
Nested Model Testing Overall Differences	-3.11	-4.16, -2.06	-5.93	<.001	.17	-1.53	-2.59, -.48	-2.91	.004	.08
<i>Couple/Family Functioning Outcomes</i>										
Relationship Commitment	-.18	-.25, .10	-4.45	<.001	.26	-.002	-.08, .06	-0.04	.968	.00
Relationship Problems	4.72	2.70, 6.74	4.68	<.001	.27	1.40	-.64, 3.44	1.38	.170	.08
Family Cohesion	-.31	-.42, -.19	-5.26	<.001	.29	-.10	-.22, .02	-1.76	.079	.10
Nested Model Testing Overall Differences	-.20	-.25, -.15	-8.46	<.001	.22	-.06	-.11, -.01	-2.39	.017	.06