

Back to School: The effects of school reopening on parents and children

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February 17, 2021

Abstract

On 15 April, over a few days, Danish schools partially reopened. Only children up until the 5th grade were allowed to return to school. We present results from a two-wave panel survey collected for parents with children in the 4th to the 7th grade in the week that schools partially reopened (Wave 1, initial N = 1,303) and again two weeks after (Wave 2, initial N = 1,000 reinterviewed). Using a difference-in-difference analysis, we compare parents with children below and above the cut-off. We do not find major differences in how our outcomes of interest develop. Government support decreased slightly more for parents whose children stayed at home, but child well-being, parental stress, economic situation mostly evolved in parallel for the two groups of families. More research is warranted on the longer term effects of school lockdowns and reopenings under different social contexts.

Preprint. Paper accepted in Scandinavian Political Studies. Final version might differ, please check and cite published article. Materials to reproduce analysis are available at:
<https://doi.org/10.7910/DVN/NO8BAV>.

Both authors contributed equally in all stages of the research process. The authors thank the Inequality Platform at Copenhagen Business School for providing partial funding for this project. The project was fully funded by means from Copenhagen Business School. The authors declare no conflicting interests. Neither ethics approval nor patient consent was required for this study.

The COVID-19 pandemic created a new reality that involved lockdowns, which varied in the extent of regulations, timing, and implementation steps (Hale et al. 2020), and how they were met in terms of trust and compliance (Bol et al. 2020, Jørgensen, Bor and Petersen 2020). The success or failure of these initiatives has been subject to debates (Gaskell et al. 2020) and as lockdowns persisted, the main focus shifted to responsible and efficient ways of reopening society (Panovska-Griffiths et al. 2020). Given the public health, economic, and political implications lockdowns and reopening strategies have, detailed analyses and case based assessment of various strategies employed can contribute to the growing knowledge base regarding potential reopening steps (Van Bavel et al. 2020).

We contribute by analyzing the effects of school reopening in Denmark, exploiting the staggered reopening in the Spring of 2020. Most countries implementing a lockdown also closed schools and the far reaching consequences of prolonged school closures were weighed against the potential risk of reopening. Reopening schools has been a very contested topic, with few clear takeaway results or solutions (Armitage and Nellums 2020).¹

We focus on a set of child and parental level outcomes. Since children are the main *subjects* of schooling, beyond their academic progress, their well-being has been at the forefront of the lockdown length discussion. Research indicates that the school closures reduced learning and that this was concentrated among students from low socio-economic background and already low-performing students (Kuhfeld et al. 2020, Bol 2020).

School closures also implied potential personal and economic stress mounting on parents, whose working capabilities were reduced as children were staying at home. Finally, as these are political decisions regulated by the governing bodies, the implementation and potential effects for the citizens will be contingent on how well these political elites perform, and future political actions maybe be subject to feedback from implemented policies and the publics' support (Béland 2010, Moynihan and Soss 2014). This makes it relevant to consider how citizen evaluate the performance of political and administrative elites.

¹See UNESCO Education: From disruption to recovery. See The New York Times coverage [here](#) or [here](#).

DESIGN AND MEASUREMENT

Design

Danish schools partially reopened over a few days starting on 15 April, 2020 after having been closed since 13 March: only children up until the 5th grade were allowed to return to school, while children in the 6th grade and above ended up staying at home until 18 May. The arbitrary cut-off for who could return to school opens a window for studying the effect on parents of having a child stay at home due to school lockdown. It also allows us to look at the effect on children's well-being of remaining at home seen through the eyes of their parents. Around the cut-off, parents with children in the 4th or 5th grade should not be too different from parents with children in 6th or 7th grade, but when schools reopened some of them could send their children back to school, while some of them could not. Likewise, children in the 4th and 5th grade are not too different from children in the 6th and 7th grade.

Our research design is to compare outcomes for parents with children in the 4th or 5th grade to parents with children in the 6th or 7th grade to learn about the effect of having a child remain at home. We rely on a two-wave panel structure that allows us to eliminate any time invariant differences between the groups and estimate the effect of having a child stay at home in a difference-in-difference setup.

Data

We collected panel-survey data for parents with children in the 4th to the 7th grade in the week that schools reopened (Wave 1, initial N = 1,303) and again two weeks after (Wave 2, initial N = 1,000 re-interviewed). The first round was fielded from Wednesday 15 April to Wednesday 22 April, the first week that schools reopened. In the survey, respondents were initially scanned for whether they had any children in the 4th to the 7th grade: only parents with at least one child in the 4th to the 7th grade progressed in the survey.

The first round used a mix of a web-based panel and respondents who were contacted and surveyed by phone. One parent per household completed the survey. In the second round, data collection was carried out from 28 April to 6 May among parents who participated in the first round and all interviews were online. All questions of interest were repeated with the same exact wording. The survey company that we partnered with aims for representative samples that resembles probability samples

of the target population of Danish parents with children in the relevant age group. However, there is an over-representation of mothers relative to fathers in the survey.

Before the analysis, we removed 12 respondents who reported having 4 or more children in the same grade in the household and another 12 respondents who reported being 27 years old or younger, as we deemed it unlikely that they would be parents, step-parents, or legal guardians of the school children in their household. This leaves us with a total of 1,279 respondents in the first round and 986 in the second round. We have re-interviews for 413 parents with at least one child in the 4th or 5th grade (but no children in 6th or 7th), and 427 parents with at least one child in 6th or 7th grade (but no children in the 4th or 5th grade).

Parental outcomes

We measure parents' stress with three items from the seven-item short-form *Depression Anxiety Stress Scales* (Henry and Crawford 2005), with the following wording: *Please read each statement. How much did each statement apply to you over the past week? There are no right or wrong answers.* The three items were: I found it hard to wind down; I felt I was rather touchy; I was intolerant of anything that kept me from getting on with what I was doing. Respondents answered on a scale ranging from '1 = Did not apply to me at all' to '4 = Applied to me very much, or most of the time'.

As a proxy for general government support, we focused on the support for the prime minister, asking *Overall, how do you think that Mette Frederiksen is doing as PM?*, with answer options ranging from '1 = Very bad' to '5 = Very good'. The Danish Prime Minister, Mette Frederiksen, has been the political face on the response to the coronavirus. She has headed the most important press briefings and announcements.

The Danish Health Authorities (Sundhedsstyrelsen) and Statens Serum Institut have been the administrative face of the response to the coronavirus and their handling of the situation has been subject of much debate including early critique from the government and health care workers.² To measure support for the administrative response, we asked *Overall, how do you think that the health authorities represented by The Danish Health Authorities and Statens Serum Institut are handling the COVID-19 pandemic?*, using the same response categories as before.

We included three items related to parents' economic and job situation to measure economic impact on the household, individual ability to do one's job, and concerns with future employment. First,

²See Danish media coverage [here](#) and critique from Nurses' Union [here](#).

we asked *How has the Corona crisis affected your household's economic situation?*, where respondents could answer from '*0 = substantially worsened*' to '*10 = substantially improved*'. Second, we asked *Compared to a regular work week before the Coronavirus, what percent of your work obligations would you say that you will be able to meet this week?* Respondents could write in a number between 0 and 100. Third, we asked *Considering your current working conditions, how concerned are you with your employment situation in the coming months?* Here respondents could answer from '*1 = Not concerned at all*' to '*4 = Very concerned*'.

Child outcomes

Parents assessed three items from the seven-item *Short Warwick-Edinburgh Mental Well-being Scale* on behalf of their children (Stewart-Brown et al. 2009). For the oldest child, we asked: *Of the children in your household who are in the 4th to 7th grade, please think of the oldest one. How well would you say that each of the following statements have applied to him or her over the latest week?*, with responses on a scale ranging from '*1 = at no time*' to '*5 = all the time*'. The three items were: He or she has been feeling relaxed; He or she has been dealing with problems well; He or she has been able to make up his or her own mind about things. For the second-oldest child, we changed *oldest* to *second-oldest* and so forth, covering all the children in the 4th to 7th grade in the household.

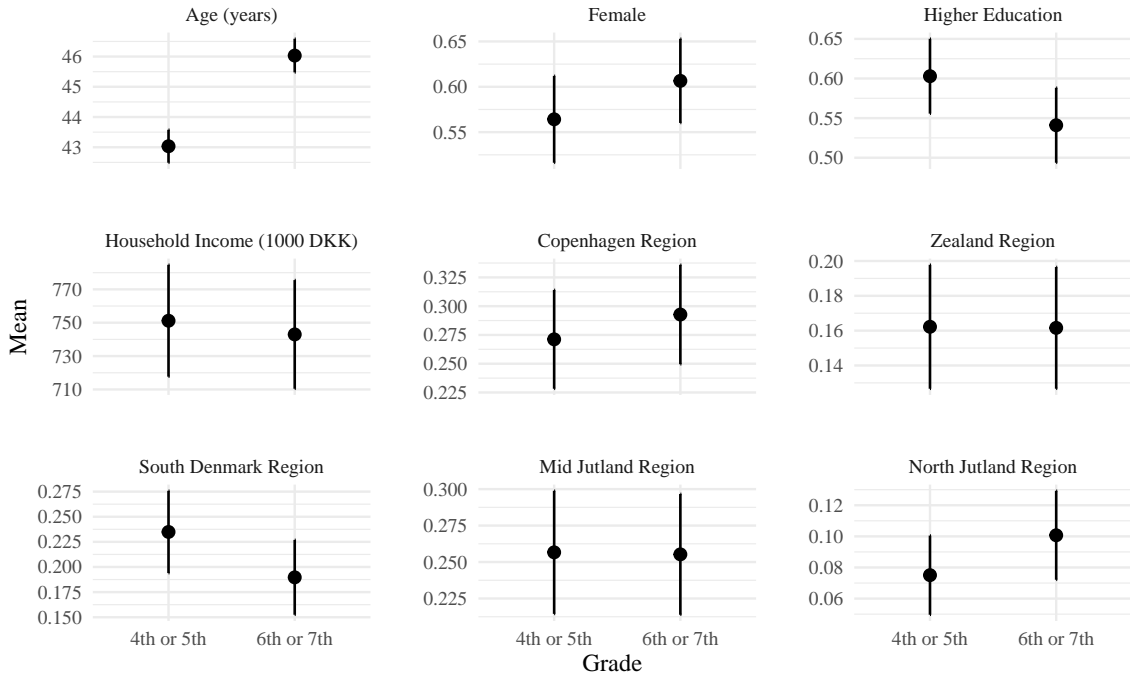
Covariate balance

Figure 1 shows that the two groups are fairly similar on age, sex, education, household income, and region. For education, we code everyone who self-reported a bachelor's degree or higher as '1'. Household income is based on self-reported income in brackets and we rescale the income to be in the middle of the bracket. The top-bracket is open to the right, so here we assign the minimum value of that bracket.

In Figure 1, we plot means and 95% confidence intervals for parents of children in the 4th or 5th grade and for parents in the 6th and 7th grade. There are no major differences except for age, where parents with children in higher grades are a little older. This is unsurprising as older children will on average have older parents. In the analyses below, we present our results both with and without controlling for this set of covariates.³

³The re-interview rates are 0.77 and 0.76 in the two groups that will be compared, thus we find no evidence for differential attrition.

Figure 1: Mean comparison of parental covariates.



RESULTS

We first report means in each wave and overall changes between waves for all parents in Table 1. For this table and all remaining analyses, all outcomes have been rescaled to be on a 0 to 100 scale, for ease of interpretation. With the exception of parental stress measures, all variables are coded so that higher values reflect more positive outcomes (more support, more well-being, and so on). Parental stress is instead coded such that higher values mean more stress.

Table 1: Means and mean differences between wave 1 and wave 2.

| | Wave 1 | Wave 2 | $\Delta_{w_2-w_1}$ | 95% CI around Δ |
|--|--------|--------|--------------------|------------------------|
| Parent stress | 19.3 | 17.7 | -1.6 | [-2.8;-0.4] |
| Hard to wind down | 22 | 19.7 | -2.3 | [-4.2;-0.5] |
| Rather touchy | 16.9 | 16.8 | -0.1 | [-1.7;1.6] |
| Intolerant of anything that kept me from | 18.9 | 16.6 | -2.4 | [-4.1;-0.6] |
| PM support | 81.1 | 77.7 | -3.3 | [-4.3;-2.3] |
| Health Authority support | 79.5 | 77.3 | -2.2 | [-3.3;-1.0] |
| Economic well-being | 48 | 47.8 | -0.1 | [-0.8;0.5] |
| Work capacity | 82.6 | 85 | 2.1 | [0.5;3.7] |
| Job outlook | 84.7 | 85.2 | 0.4 | [-1.0;1.8] |
| Child well-being | 77.4 | 76.3 | 0.6 | [-2.1;0.1] |
| Feeling relaxed | 74.9 | 72.3 | 0.8 | [-4.2;-0.9] |
| Dealing well | 77.8 | 77.3 | 0.8 | [-2.1;0.9] |
| Make up mind | 79.4 | 79.4 | 0.8 | [-1.5;1.5] |

The means are displayed for each survey round along with the difference and 95% confidence interval around the difference. Parental stress and child well-being, we use the average scores across the three items making up the scales (Cronbach's α of 0.63 and 0.73 in wave 1). The difference in means shows the general development over time for all parents in our panel.

Overall, while there are some important changes over the two weeks, the magnitude of these are quite small and some of these differences are not statistically significant. We find an overall decrease in parental stress levels, decrease in support for the Prime Minister and the Health Authorities, and an increase in work capacity. Regarding child well-being, we find small decreases and the only significant change is related to how relaxed children are perceived by their parents.

Model estimates for developments over time

We now turn to the analysis of whether parents' outcomes and children's well-being were affected by some children going back to school and not others. For each outcome, we use a difference-in-difference strategy with the first survey wave as a baseline and compare parents whose children went back to school and parents whose children did not.⁴ For each parental outcome, we specify the following model, and estimate it using OLS:⁵

$$(y_{i,w2} - y_{i,w1}) = \alpha + \beta \text{Stayed home}_i + \gamma \text{Controls}_i + \epsilon_i$$

In the model, β will tell us how much each outcome changed for parents whose child stayed at home compared to parents whose children went back to school. We summarize two sets of model results in Figure 2: one without control variables and one controlling for the parent's gender, age, household income, region of residence, and an indicator for having at least a Bachelor's degree.⁶ We saw a small average decrease in stress from wave 1 to wave 2 in Table 1 and low overall stress levels. By the second wave, the differences between the parents in terms of stress increased, which is in the expected direction, but none of the changes are statistically significant.

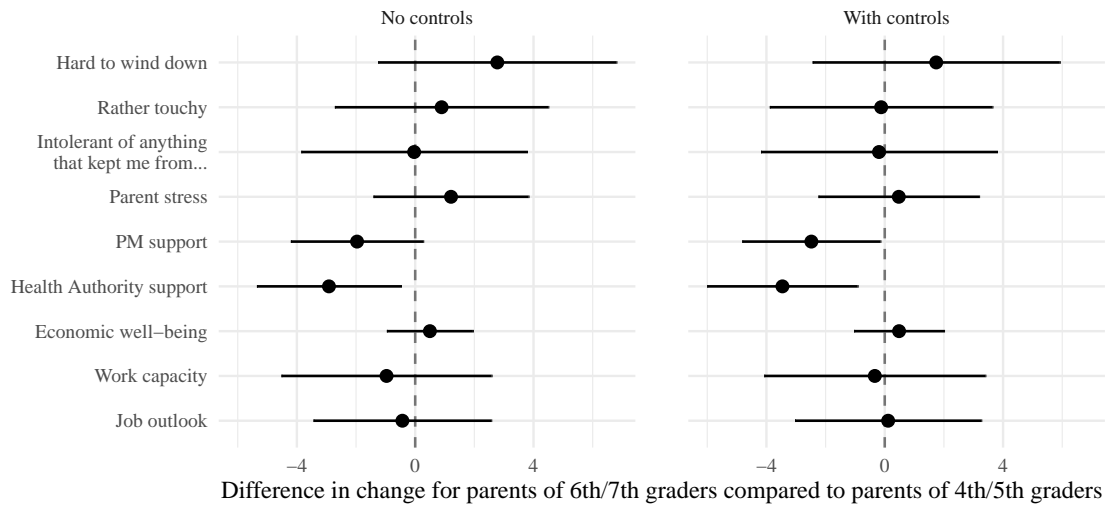
The general support for the Prime Minister (PM) and the Health Authorities was strong in both waves, however, there were some developments during the partial reopening. For the PM, we saw in Table 1 a slight decrease of around 3 points across all parents in the support numbers, and Figures 2 show us that it is larger among those with children at home. This is mostly driven by stronger support among the parents with kids at home in the first survey wave, which then drops to similar numbers as

⁴For the present analysis, we omit parents who have children on both sides of the cut-off, but we include them for a separate analysis of children's well-being later. Some parents have more than one child in either the 4th or 5th grade or in the 6th or 7th grade. We keep these parents in the analysis.

⁵We estimate the simple DiD model, but some parents in our sample have children outside the relevant age groups who went back to school or not. As an alternative strategy, we also instrumented share of children at home by having children in the relevant age groups using a two-stage least squares approach. This yielded similar results.

⁶To avoid losing data due to item non-response, we also include an indicator for missing values on income and impute the mean value of income to these observations. We report the means in both waves for both parental groups in Appendix A1 and full model results in Appendix A2.

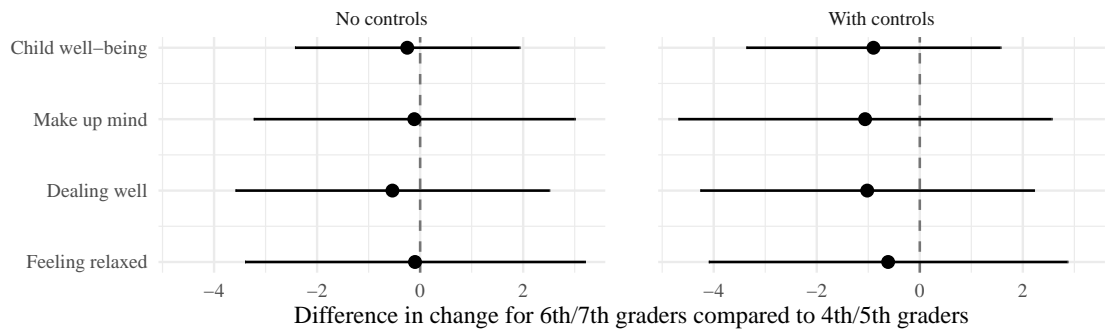
Figure 2: Model estimates for differences (β) in development over time.



those reported by parents whose children went back to school. The numbers for wave 2, while lower in both cases, align very closely between different groups of parents.

We mostly see similar patterns for the support for the Health Authorities, with the exception that here, the approval stayed unchanged among parents who could send their children back to school. In parallel, we see a roughly four points decrease among parents who still had to keep their children at home, overall resulting in statistically significant differences in the development both when we compare raw means and when we include control variables. The last set of results in Figure 2 pertain to differences in the economic variables. As visible, between-wave differences are small and there is no systematic direction in changes.

Figure 3: Model estimates for differences in development over time in child well-being.



Finally, we look at outcomes at the child level models without and with parental controls. We rely on a very similar specification as for parents, with two minor adjustments: (1) if parents had multiple children on the same side of the cut-off, all child ratings are taken into account and we extend the

matrix of controls with child order fixed effects; (2) since some parents report on multiple children, we report cluster (family id) corrected uncertainty measures using wild cluster bootstrap (Esarey and Menger 2019). The model based estimates of differences in development are displayed in Figure 3, while well-being means with uncertainty are shown in Appendix A1.

Table 1 indicated overall high levels of child well-being and very small changes between the two waves. Our results here show that these small changes were uniform across the two groups of children. We find no evidence that their well-being increased more (or decreased less) in the short-term when they are allowed to return to school, compared to their slightly older peers who remained at home; at least not from the perspective of their parents. We find similar results when we instead look at children in the different age groups from the same family, reported in Appendix A3. Finally, we reproduce our main analysis here using the same models and coding principles, but only compare 5th graders to 6th graders (and their parents). Thus, our sample size is reduced (4th and 7th graders and their parents are excluded now), but the comparison follows the strict cut-off point. Yet again, our results are very similar and are reported in Appendix A4.

DISCUSSION

We find mostly null results. The life of those with children still stuck at home did not get alarmingly worse in the two weeks when compared to those whose children went back. Overall, these (null) results are broadly relevant for how individual and family conditions influenced by necessary government measures can shape approval and compliance, which then can feed into what interventions can be used and with what frequency at different stages of the crisis.

These findings come with some important caveats. First, we emphasize that we could only track differences in developments *in the short run*, because schools reopened to all children soon after our second wave. Schools have been shown to improve children's socio-emotional development, so we can easily imagine that prolonged school closures would have different effects (Jackson et al. 2020).

Second, our study cannot tell us about potential health hazards of reopening schools. In our survey, we included a self-reported measure for COVID-19 infections in the households, but the survey instrument had limited use. In wave 2, 0.7% of our sample reported at least one positive test in the household. Of a 5.8 million population, Denmark had 170 new cases on the first day of data collection for our first round and 153 cases when we started the second round.

Third, lockdown compliance was very high in Denmark and the overall economic conditions were

reasonably stable, far from the U.S. regarding unemployment for example. All these contribute to an overall good starting point in our first wave regarding our outcomes, comparatively good external conditions, and likely strong compliance with remaining regulations. We cannot say what the effects would have been if the disease had been more prevalent in society at the time of reopening.

Fourth, we only study the effect of children in the 4th to the 7th grade returning to school or remaining home. Parents in our sample will have older or younger children, so we only estimate the effect of having *one* child return or stay home. In addition, as we only consider average effects there could be heterogeneous effects where some children or parents experience negative impacts (Bacher-Hicks, Goodman and Mulhern 2020, Jæger and Blaabæk 2020). Effects may also differ for older or younger children.

One of the more surprising findings is that we do not see any change in children's well-being. As we mention above, this may be due to the relatively short term nature of our study. Alternatively, it could also be that the schools children returned to were not quite, as they knew them. Children were among other things split in smaller groups, they had to observe social distancing, and they had to frequently clean their hands. These measures could have imposed stress and anxiety on children to a degree where it countered the effect of returning to school.

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Appendices

Online Supplementary materials for “Back to School: The effects of school reopening on parents and children”.

A1 MEAN COMPARISONS

Figure A1.1: Parental outcome means in wave 1 and wave 2 with 95% confidence intervals.

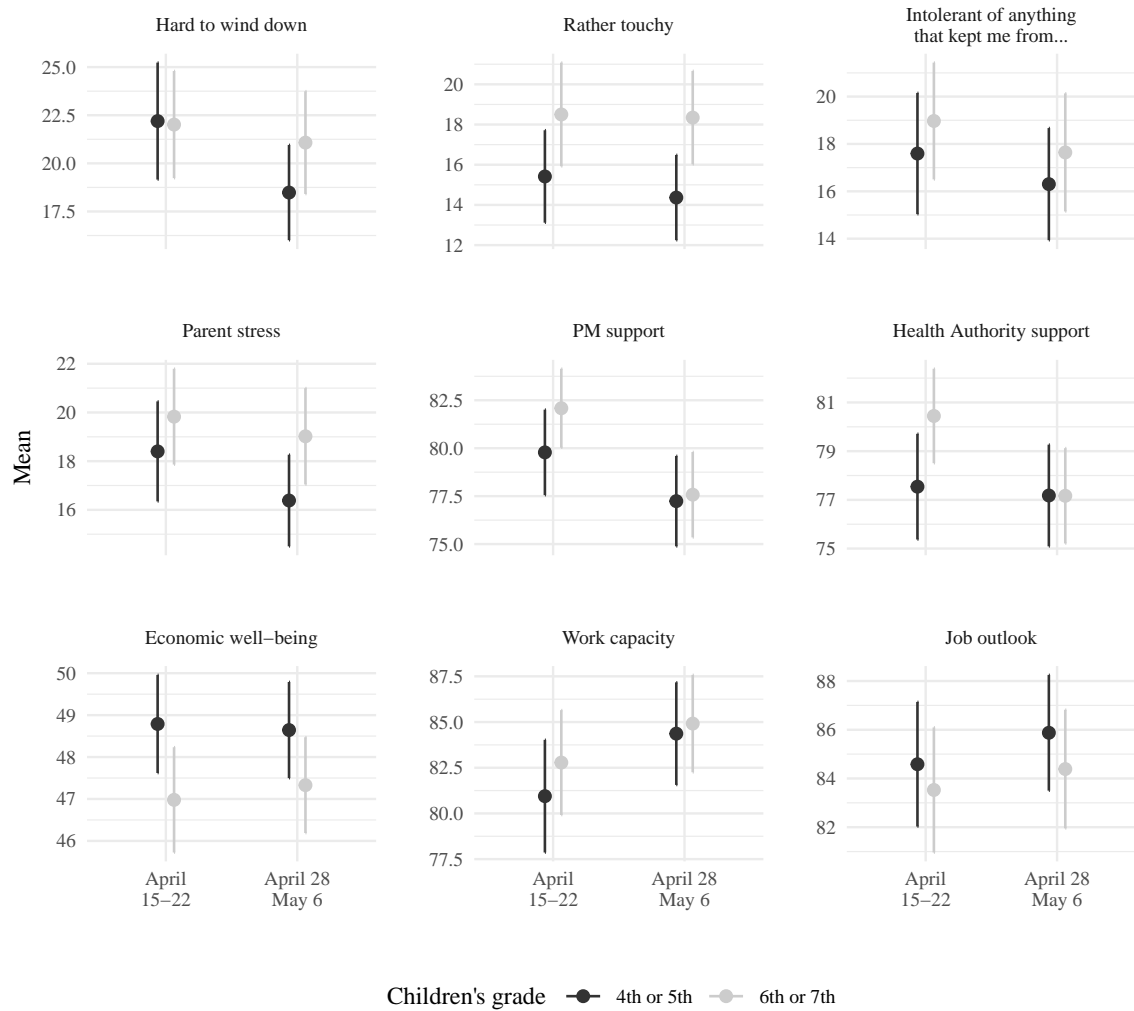
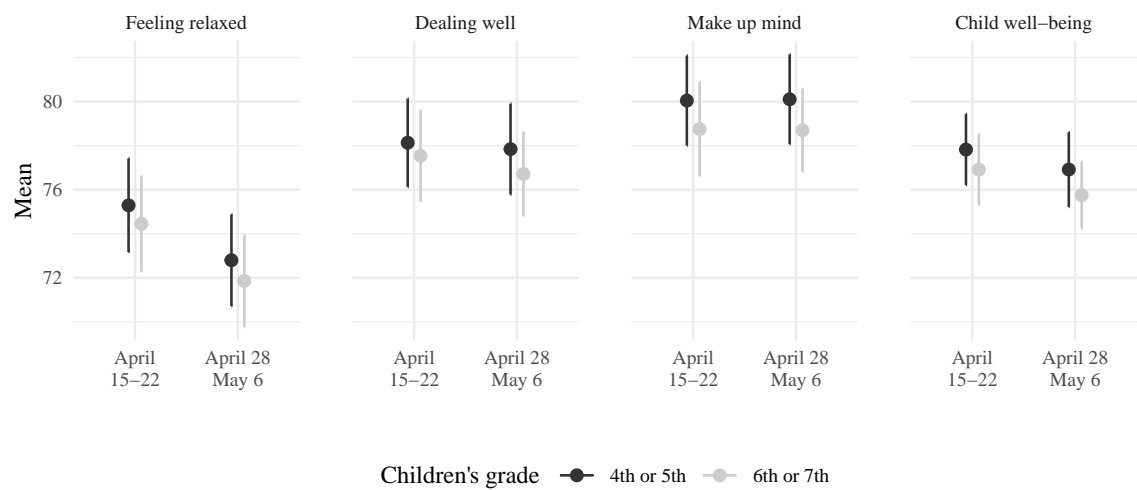


Figure A1.2: Child outcome means in wave 1 and wave 2 with 95% confidence intervals.



A2 REGRESSION MODEL RESULTS IN TABLE FORMAT

In Table A2.1-A2.13, we present regression outputs for the models presented in the main text with and with out control variables. We use OLS to estimate the models at the parent level and maximum likelihood to estimate the models and the child level. In all tables $*p < 0.05$ and 95% confidence intervals in brackets.

Table A2.1: Parental model results: Hard to wind down

| | Model 1 | Model 2 |
|---------------------------|-----------------------|------------------------|
| Intercept | -3.71 [-6.58; -0.84]* | -10.66 [-30.56; 9.24] |
| Stayed home (6-7th grade) | 2.78 [-1.25; 6.80] | 1.74 [-2.44; 5.92] |
| Gender | | -3.32 [-7.58; 0.93] |
| Age | | 0.22 [-0.14; 0.58] |
| Region2 | | -3.84 [-10.13; 2.46] |
| Region3 | | -6.86 [-12.65; -1.06]* |
| Region4 | | -0.32 [-5.88; 5.25] |
| Region5 | | 4.54 [-3.24; 12.32] |
| Higher education | | 0.81 [-3.38; 5.00] |
| Income | | 0.00 [-0.00; 0.01] |
| Incl. missing | | 6.03 [0.29; 11.77]* |
| R ² | 0.00 | 0.03 |
| Adj. R ² | 0.00 | 0.02 |
| Num. obs. | 840 | 840 |

Table A2.2: Parental model results: Rather touchy

| | Model 1 | Model 2 |
|---------------------------|---------------------|------------------------|
| Intercept | -1.05 [-3.62; 1.52] | -11.69 [-29.62; 6.24] |
| Stayed home (6-7th grade) | 0.89 [-2.71; 4.50] | -0.12 [-3.89; 3.64] |
| Gender | | -0.80 [-4.63; 3.04] |
| Age | | 0.27 [-0.05; 0.59] |
| Region2 | | -3.35 [-9.02; 2.32] |
| Region3 | | -5.36 [-10.58; -0.14]* |
| Region4 | | -0.04 [-5.05; 4.97] |
| Region5 | | 3.01 [-4.00; 10.02] |
| Higher education | | 2.10 [-1.67; 5.87] |
| Income | | 0.00 [-0.01; 0.01] |
| Incl. missing | | 1.81 [-3.37; 6.98] |
| R ² | 0.00 | 0.02 |
| Adj. R ² | -0.00 | 0.00 |
| Num. obs. | 840 | 840 |

Table A2.3: Parental model results: Intolerant of anything that kept me from...

| | Model 1 | Model 2 |
|---------------------------|---------------------|------------------------|
| Intercept | −1.29 [−4.01; 1.43] | 1.49 [−17.52; 20.49] |
| Stayed home (6-7th grade) | −0.04 [−3.85; 3.78] | −0.19 [−4.18; 3.79] |
| Gender | | 1.24 [−2.82; 5.31] |
| Age | | −0.06 [−0.41; 0.28] |
| Region2 | | −2.89 [−8.91; 3.12] |
| Region3 | | −7.07 [−12.60; −1.53]* |
| Region4 | | −2.54 [−7.86; 2.77] |
| Region5 | | 1.09 [−6.34; 8.52] |
| Higher education | | 0.49 [−3.51; 4.49] |
| Income | | 0.00 [−0.01; 0.01] |
| Incl. missing | | −0.74 [−6.22; 4.74] |
| R ² | 0.00 | 0.01 |
| Adj. R ² | −0.00 | −0.00 |
| Num. obs. | 840 | 840 |

Table A2.4: Parental model results: Parent stress

| | Model 1 | Model 2 |
|---------------------------|-----------------------|------------------------|
| Intercept | −2.02 [−3.89; −0.15]* | −6.95 [−19.89; 5.98] |
| Stayed home (6-7th grade) | 1.21 [−1.41; 3.83] | 0.47 [−2.24; 3.19] |
| Gender | | −0.96 [−3.72; 1.81] |
| Age | | 0.14 [−0.09; 0.38] |
| Region2 | | −3.36 [−7.45; 0.73] |
| Region3 | | −6.43 [−10.19; −2.66]* |
| Region4 | | −0.97 [−4.58; 2.65] |
| Region5 | | 2.88 [−2.18; 7.94] |
| Higher education | | 1.13 [−1.59; 3.86] |
| Income | | 0.00 [−0.00; 0.01] |
| Incl. missing | | 2.37 [−1.37; 6.10] |
| R ² | 0.00 | 0.03 |
| Adj. R ² | −0.00 | 0.02 |
| Num. obs. | 840 | 840 |

Table A2.5: Parental model results: PM support

| | Model 1 | Model 2 |
|---------------------------|-----------------------|-------------------------|
| Intercept | −2.54 [−4.14; −0.95]* | −12.79 [−23.92; −1.66]* |
| Stayed home (6-7th grade) | −1.97 [−4.20; 0.27] | −2.48 [−4.82; −0.15]* |
| Gender | | 1.53 [−0.85; 3.91] |
| Age | | 0.21 [0.01; 0.41]* |
| Region2 | | 1.50 [−2.02; 5.02] |
| Region3 | | 0.84 [−2.40; 4.08] |
| Region4 | | 0.28 [−2.83; 3.39] |
| Region5 | | −3.30 [−7.65; 1.05] |
| Higher education | | 0.52 [−1.82; 2.86] |
| Income | | −0.00 [−0.01; 0.00] |
| Incl. missing | | −1.06 [−4.27; 2.16] |
| R ² | 0.00 | 0.02 |
| Adj. R ² | 0.00 | 0.01 |
| Num. obs. | 840 | 840 |

Table A2.6: Parental model results: Health Authority support

| | Model 1 | Model 2 |
|---------------------------|-----------------------|-----------------------|
| Intercept | −0.36 [−2.10; 1.37] | −6.12 [−18.24; 6.00] |
| Stayed home (6-7th grade) | −2.92 [−5.35; −0.48]* | −3.46 [−6.00; −0.92]* |
| Gender | | 1.28 [−1.31; 3.87] |
| Age | | 0.12 [−0.10; 0.34] |
| Region2 | | 1.30 [−2.54; 5.13] |
| Region3 | | 0.70 [−2.83; 4.22] |
| Region4 | | −0.78 [−4.17; 2.61] |
| Region5 | | 2.87 [−1.86; 7.61] |
| Higher education | | 0.41 [−2.14; 2.96] |
| Income | | −0.00 [−0.01; 0.00] |
| Incl. missing | | 3.20 [−0.29; 6.70] |
| R ² | 0.01 | 0.02 |
| Adj. R ² | 0.01 | 0.01 |
| Num. obs. | 840 | 840 |

Table A2.7: Parental model results: Economic well-being

| | Model 1 | Model 2 |
|---------------------------|---------------------|---------------------|
| Intercept | −0.15 [−1.18; 0.89] | 0.20 [−7.04; 7.44] |
| Stayed home (6-7th grade) | 0.50 [−0.96; 1.95] | 0.48 [−1.04; 2.00] |
| Gender | | −0.39 [−1.94; 1.16] |
| Age | | 0.03 [−0.10; 0.16] |
| Region2 | | 1.45 [−0.84; 3.75] |
| Region3 | | 0.99 [−1.12; 3.10] |
| Region4 | | 1.04 [−0.99; 3.06] |
| Region5 | | −1.18 [−4.01; 1.65] |
| Higher education | | −0.03 [−1.55; 1.50] |
| Income | | −0.00 [−0.00; 0.00] |
| Incl. missing | | −0.50 [−2.59; 1.59] |
| R ² | 0.00 | 0.01 |
| Adj. R ² | −0.00 | −0.00 |
| Num. obs. | 840 | 840 |

Table A2.8: Parental model results: Work capacity

| | Model 1 | Model 2 |
|---------------------------|---------------------|----------------------|
| Intercept | 2.76 [0.25; 5.26]* | 6.57 [−11.62; 24.75] |
| Stayed home (6-7th grade) | −0.97 [−4.52; 2.58] | −0.34 [−4.07; 3.40] |
| Gender | | 1.41 [−2.35; 5.18] |
| Age | | −0.12 [−0.46; 0.22] |
| Region2 | | −1.66 [−7.28; 3.96] |
| Region3 | | 1.45 [−3.67; 6.58] |
| Region4 | | −0.44 [−5.36; 4.48] |
| Region5 | | −4.44 [−11.64; 2.76] |
| Higher education | | 2.47 [−1.30; 6.24] |
| Income | | −0.00 [−0.01; 0.00] |
| Incl. missing | | −3.09 [−8.34; 2.16] |
| R ² | 0.00 | 0.01 |
| Adj. R ² | −0.00 | −0.00 |
| Num. obs. | 680 | 680 |

Table A2.9: Parental model results: Job outlook

| | Model 1 | Model 2 |
|---------------------------|---------------------|---------------------|
| Intercept | 1.29 [−0.85; 3.43] | 7.31 [−7.70; 22.31] |
| Stayed home (6-7th grade) | −0.43 [−3.44; 2.57] | 0.12 [−3.03; 3.26] |
| Gender | | −2.58 [−5.79; 0.63] |
| Age | | −0.09 [−0.36; 0.18] |
| Region2 | | −1.14 [−5.89; 3.60] |
| Region3 | | 1.56 [−2.80; 5.93] |
| Region4 | | 0.69 [−3.50; 4.89] |
| Region5 | | 0.08 [−5.79; 5.94] |
| Higher education | | 1.13 [−2.03; 4.29] |
| Income | | 0.00 [−0.00; 0.01] |
| Incl. missing | | −1.01 [−5.33; 3.32] |
| R ² | 0.00 | 0.01 |
| Adj. R ² | −0.00 | −0.01 |
| Num. obs. | 840 | 840 |

Table A2.10: Child model results: Feeling relaxed

| | Model 1 | Model 2 |
|---------------------------|-----------------------|-----------------------|
| Intercept | −2.49 [−4.75; −0.24]* | −11.91 [−29.07; 5.24] |
| Stayed home (6-7th grade) | −0.10 [−3.40; 3.20] | −0.61 [−4.10; 2.87] |
| Child 2 | | 4.22 [−2.27; 10.72] |
| Child 3 | | 30.31 [23.81; 36.80]* |
| Gender | | 0.37 [−3.14; 3.88] |
| Age | | 0.23 [−0.08; 0.55] |
| Region2 | | −0.39 [−5.76; 4.98] |
| Region3 | | −2.04 [−6.81; 2.74] |
| Region4 | | −2.46 [−6.60; 1.67] |
| Region5 | | −2.22 [−9.68; 5.24] |
| Higher education | | 2.52 [−0.89; 5.92] |
| Income | | −0.00 [−0.01; 0.00] |
| Incl. missing | | −4.66 [−9.81; 0.49] |
| AIC | 8214.45 | 8223.82 |
| BIC | 8228.80 | 8290.80 |
| Log Likelihood | −4104.22 | −4097.91 |
| Deviance | 558021.00 | 550107.64 |
| Num. obs. | 884 | 884 |

Table A2.11: Child model results: Dealing well

| | Model 1 | Model 2 |
|---------------------------|---------------------|-----------------------|
| Intercept | −0.29 [−2.55; 1.97] | −2.19 [−17.72; 13.35] |
| Stayed home (6-7th grade) | −0.54 [−3.58; 2.51] | −1.02 [−4.26; 2.22] |
| Child 2 | | 1.99 [−5.32; 9.29] |
| Child 3 | | 1.61 [−4.05; 7.28] |
| Gender | | −0.25 [−3.62; 3.13] |
| Age | | 0.12 [−0.16; 0.41] |
| Region2 | | −2.23 [−7.12; 2.66] |
| Region3 | | −0.95 [−5.18; 3.27] |
| Region4 | | −2.25 [−6.44; 1.93] |
| Region5 | | 0.16 [−5.52; 5.85] |
| Higher education | | −0.24 [−3.34; 2.86] |
| Income | | −0.00 [−0.01; 0.00] |
| Incl. missing | | 0.48 [−3.24; 4.19] |
| AIC | 8018.64 | 8036.84 |
| BIC | 8033.00 | 8103.82 |
| Log Likelihood | −4006.32 | −4004.42 |
| Deviance | 447153.32 | 445234.05 |
| Num. obs. | 884 | 884 |

Table A2.12: Child model results: Make up mind

| | Model 1 | Model 2 |
|---------------------------|---------------------|--------------------------|
| Intercept | 0.06 [−2.23; 2.34] | −12.62 [−29.18; 3.94] |
| Stayed home (6-7th grade) | −0.11 [−3.23; 3.00] | −1.06 [−4.68; 2.56] |
| Child 2 | | 3.21 [−6.86; 13.29] |
| Child 3 | | −24.94 [−30.43; −19.45]* |
| Gender | | 1.13 [−2.52; 4.79] |
| Age | | 0.25 [−0.07; 0.57] |
| Region2 | | −1.24 [−6.53; 4.06] |
| Region3 | | 0.32 [−4.59; 5.23] |
| Region4 | | −0.56 [−5.19; 4.07] |
| Region5 | | −1.14 [−7.25; 4.98] |
| Higher education | | −1.11 [−4.56; 2.34] |
| Income | | 0.00 [−0.00; 0.01] |
| Incl. missing | | 1.78 [−2.42; 5.98] |
| AIC | 8083.60 | 8098.74 |
| BIC | 8097.95 | 8165.72 |
| Log Likelihood | −4038.80 | −4035.37 |
| Deviance | 481247.17 | 477526.76 |
| Num. obs. | 884 | 884 |

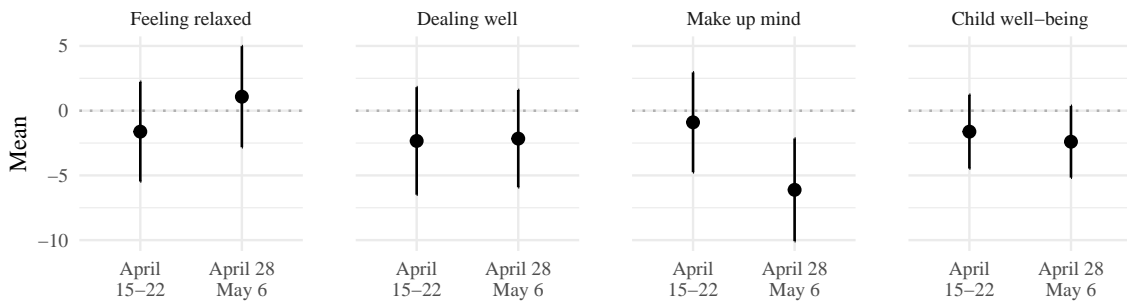
Table A2.13: Child model results: Child well-being

| | Model 1 | Model 2 |
|---------------------------|---------------------|----------------------|
| Intercept | −0.91 [−2.32; 0.50] | −8.91 [−20.99; 3.18] |
| Stayed home (6-7th grade) | −0.25 [−2.43; 1.93] | −0.90 [−3.37; 1.57] |
| Child 2 | | 3.14 [−1.73; 8.01] |
| Child 3 | | 2.33 [−1.95; 6.61] |
| Gender | | 0.42 [−2.19; 3.02] |
| Age | | 0.20 [−0.03; 0.43] |
| Region2 | | −1.28 [−5.07; 2.50] |
| Region3 | | −0.89 [−4.33; 2.54] |
| Region4 | | −1.76 [−4.83; 1.32] |
| Region5 | | −1.06 [−5.09; 2.96] |
| Higher education | | 0.39 [−2.08; 2.86] |
| Income | | −0.00 [−0.00; 0.00] |
| Incl. missing | | −0.80 [−3.88; 2.28] |
| AIC | 7505.17 | 7519.55 |
| BIC | 7519.52 | 7586.53 |
| Log Likelihood | −3749.58 | −3745.77 |
| Deviance | 250146.74 | 247999.54 |
| Num. obs. | 884 | 884 |

A3 WITHIN-FAMILY ANALYSIS

We take a look at within-family differences for children who went back to school and children who did not. In our sample, some parents have children in both the 4th or 5th grade and in the 6th or 7th grade. We have omitted these parents so far, but they give us an opportunity to study within a family, how parents rate the well-being of those of their children who went back to school and those of their children who did not. We have a total of 139 of such families.

Figure A3.3: Average within family difference between returning (4th or 5th grade) child's well-being and staying at home child's well-being (6th or 7th grade).



In Figure A3.3, we present the results of these comparison. For each wave, we show the mean of the within family differences for the well-being of the children who went back to school and the children who did not. For most outcomes, we see that parents tend to rate their older children higher, but the differences are small. We think this may be because the well-being items to some extent also tap into how mature children are and parents then rate their children relative to each other. Crucially, such a difference in rating should be stable over time and it will not affect the comparisons between children over time.

When we compare the difference between the two rounds, we see that they are small and not in a systematic direction for the individual items. As reported by the parents, children who went back to school felt more relaxed, were equally good at dealing with problems, but less able to make up their minds in comparison with their (step-)siblings staying at home. The differences are generally small and only the difference for making up one's mind is statistically significant (models not shown). For the full scale, we see a very small drop for children going back to school in comparison with their siblings staying home, but it estimated with a lot of uncertainty.

A4 STRICT CUT-OFF: COMPARING 5TH AND 6TH GRADE ONLY

We reproduce our main analysis here using the same models and coding principles, but only compare 5th graders to 6th graders (and their parents). Thus, our sample size is reduced (4th and 7th graders and their parents are excluded now), but the comparison follows the strict cut-off point. This also means that we cannot carry out meaningful within family modeling (part of our Appendix), as there are very few families that have both 5th and 6th graders.

Figure A4.4: Parental outcome means in wave 1 and wave 2 with 95% confidence intervals.

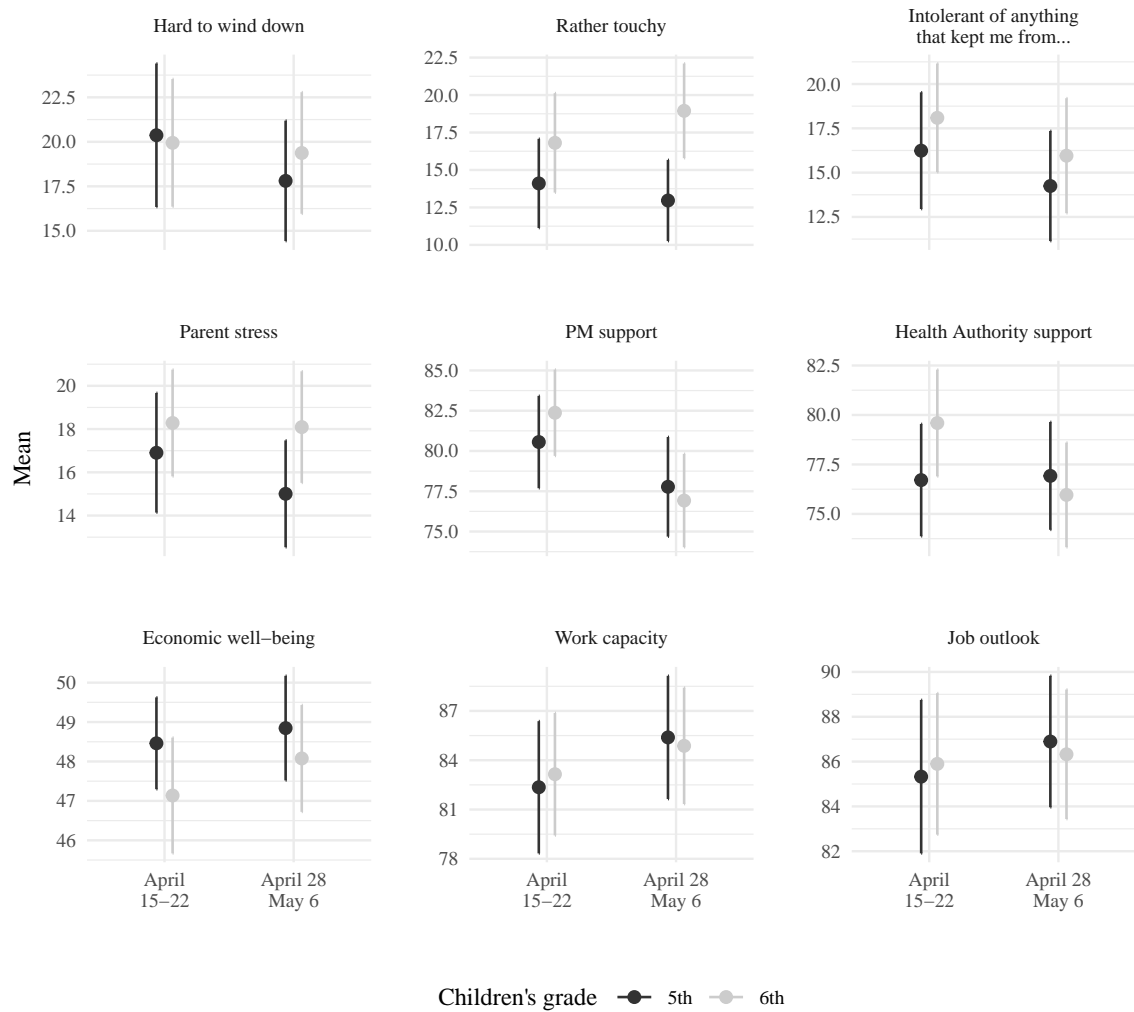


Figure A4.5: Child outcome means in wave 1 and wave 2 with 95% confidence intervals.

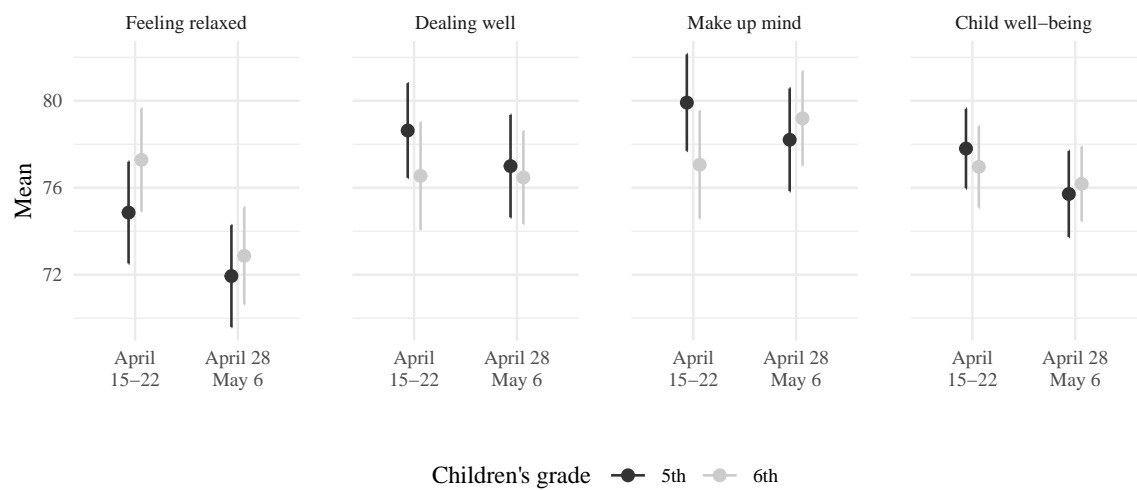


Figure A4.6: Model estimates for differences (β) in development over time.

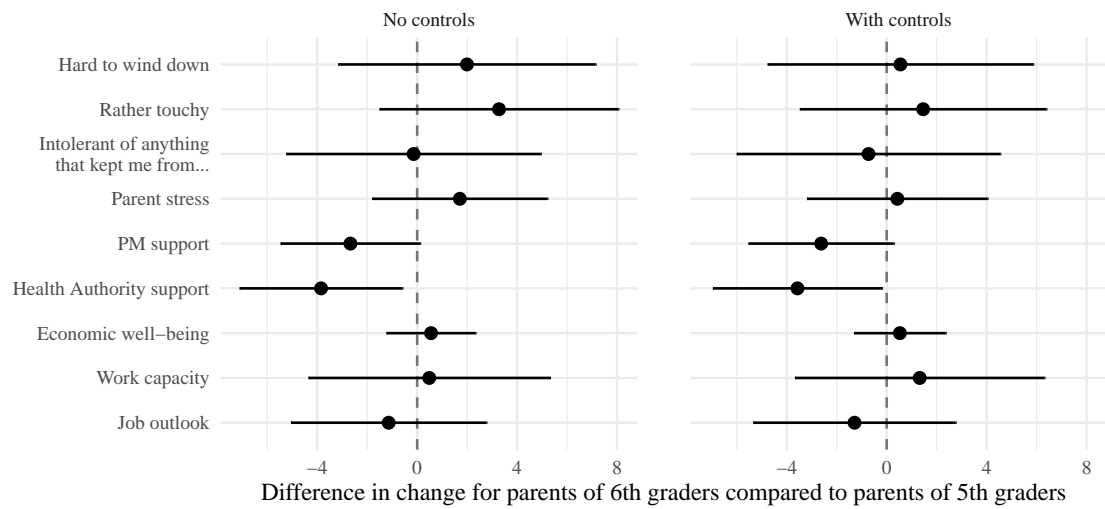


Figure A4.7: Model estimates for differences in development over time in child well-being.

