Disruptions and discontinuities in child development? The impact of the pandemic on children's distress

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COVID-19 pandemic and social restrictions

- Combination of high transmissibility and acute health consequences produced an array of social policies that limited social contact between individuals
  - Workplaces were closed
  - Schools were closed
  - Leisure activities were curtailed
  - Mobility was restricted
  - Nature of interpersonal contact was restricted

- Much of social life either stopped or went on-line

The COVID-19 pandemic and mental health

- The combined effect of the COVID-19 pandemic and associated restrictions may have increased psychological distress in **one in five people** living in Ireland (Crowley and Hughes 2021).

- The **increased presentation of anxiety and depression** in children is thought to relate to factors including lack of structures and routines with schools closed, increased time being spent on-line; a sense of lack of control in other aspects of children's lives (O'Sullivan et al 2021)

- Any exogenous exposure is experienced in the context of on-going developmental and **life course processes** which give them unique meaning and significance (Elder 1998; Elder and Shanahan 2007) and are sources of **risk** and **resilience** in responding to stressors over the life span (Diehl and Hay 2010; Fraser 1997; Masten 2004; Masten et al. 1990)

Research Questions

1. Was psychological well-being during the COVID-19 period associated with previous psychological well-being?
   - Test-retest associations

2. Did prior psychological well-being shape the nature and perception of COVID-19 related adaptions? And did this exacerbate/ameliorate subsequent mental health?
   - Mediation models

3. Did prior psychological well-being amplify/dilute the influence of COVID-19 adaptations on mental health?
   - Moderation models

Analytic strategy

I) **Growth mixture modelling** to produce empirically based latent classes of psychological well-being in childhood

- DU3Step in Mplus
    - Estimate latent class model without covariates
    - Assign cases to a latent class using an auxiliary variable approach

2) Estimate a series of **generalized linear models** using the BLIMP software

- Uses a chain regression approach to impute all missing values based on the overall associations between all modelled variables in a data specification
    - Vastly superior to listwise approaches and generally superior to traditional MICE approaches
- Very flexible in terms of model specifications

Data and measures

- Growing up in Ireland '08 cohort
  - Wave two through to the COVID-19 online survey covering ages 3 to 13
  - Imputation allows for full analysis of participants who responded to the COVID-19 questionnaire in December of 2020 and who were present in the previous four waves of data
    - Can be adjusted for other types of missingness

- Psychological Well-being – Parent reports of SDQ for ages 3, 5, 7/8, and 9 and child report for MHI-5 at age 13/during COVID

Table 1: Correlations

	SDQ Emotional Wave 2	SDQ Emotional Wave 3	SDQ Emotional Wave 4	SDQ Emotional Wave 5	MHI-5 COVID
SDQ Emotional Wave 2	1				
SDQ Emotional Wave 3	0.43*	1			
SDQ Emotional Wave 4	0.30*	0.42*	1		
SDQ Emotional Wave 5	0.29*	0.42*	0.60*	1	
MHI-5 COVID	-0.03*	-0.05*	-0.10*	-0.15*	1

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Data and measures (cont'd)

Home adaptations

- Negative Home Learning Environment
  - "I (didn't) have a quiet space to study at home"
- Covid-related stress within the family
  - "I worry about the virus infecting someone in my family"
- Parental support
  - "How well do you get on with your mum"
- Family conflict
  - "I argue more than usual with my parent(s)"
- Lost family rituals
  - "I missed a family holiday"

School adaptations

- Negative school learning environment
  - "Teachers (don't) go over material to help us catch up"
- Covid-related stress at school
  - "I don't think my classmates take Covid-19 seriously"
- People bothering the study child
  - "It was good to be apart from other students who bother me"
- Lost school events
  - "I missed my end-of-primary-school party"
- Peer disengagement
  - How often do you… "See your friends face-to-face?"

Table 2: Group-based trajectories (Growth Mixture Models)

Class	AIC	BIC	SABIC	Entropy	VLMR	LMR	BLRT	Class count (%)
1 class								
2 class	102429	102520	102472	0.850	<0.0001	<0.0001	<0.0001	2583 (85.4)/441(14.6)
3 class	102094	102215	102151	0.847	0.0003	0.0004	<0.0001	2397(79.3)/446(14.7)/181(6.0)
4 class	101830	101981	101901	0.851	0.0960	0.1010	<0.0001	72(2.4)/485(16.0)/2195(72.6)/ 272(9.0)
5 class	101596	101777	101681	0.846	0.0949	0.0994	<0.0001	75(2.5)/194(6.4)/134(4.4)/ 1967(65.0)/654(21.6)

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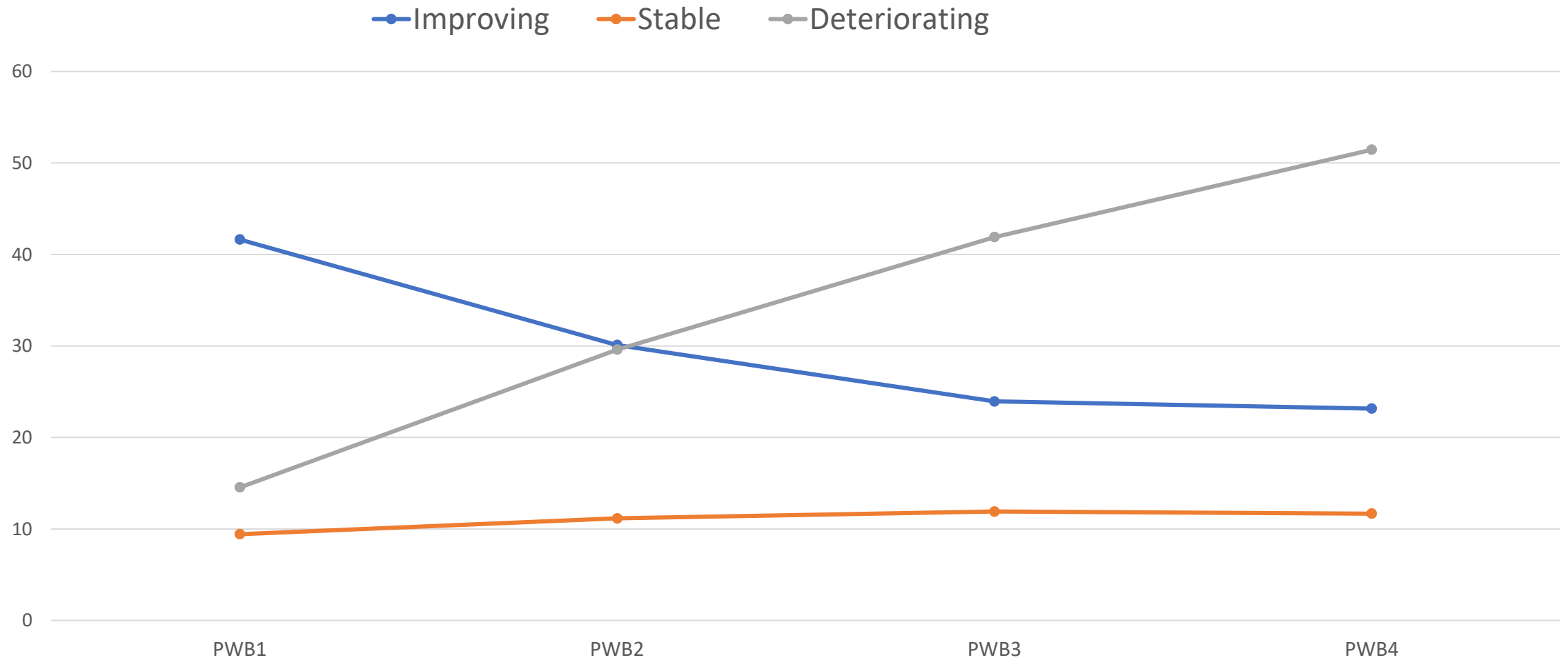Figure 1: Trajectories of psychological well-being from age 3 to 9

Table 3: Multinomial logistic coefficients of latent class membership on background covariates

	Improving Group (1)	Deteriorating Group (3)
Gender	-0.165 [-0.472 — 0.145]	0.086 [-0.123 — 0.296]
Mothers Age	-0.054* [-0.087 — -0.022]	-0.019 [-0.041 — 0.003]
Household Size	0.021 [-0.127 — 0.171]	-0.168* [-0.272 — -0.065]
Foreign Born	0.107 [-0.251 — 0.448]	-0.027 [-0.278 — 0.223]
Disability	0.206 [-0.189 — 0.568]	0.868* [0.642 — 1.098]
Family Class	-0.202* [-0.328 — -0.072]	-0.216* [-0.299 — -0.131]
Region	0.258 [-0.061 — 0.579]	0.052 [-0.166 — 0.269]
Maternal Depression	0.065* [0.022 — 0.108]	0.105* [0.078 — 0.133]
Proportion Variance Explained	**0.023** **[0.012 — 0.044]**	**0.029** **[0.021 — 0.038]**

Table 4: Regression coefficients for effect of group-based trajectories on **family-related** COVID adaptations (mediation)

	Neg Home	CS Family	Parental Support	Family Conflict	Family Rituals
Improving group	0.141 [-0.114 – 0.396]	0.244* [0.076 – 0.405]	0.012 [-0.128 – 0.105]	0.048 [-0.084 – 0.244]	-0.008 [-0.183 – 0.166]
Deteriorating group	0.283* [0.108 – 0.461]	0.137* [0.031 – 0.245]	-0.092* [-0.173 – -0.009]	0.157* [0.045 – 0.270]	-0.048 [-0.168 – 0.075]
Proportion Variance Explained	**0.029** **[0.018 – 0.042]**	**0.055** **[0.041 – 0.072]**	**0.036** **[0.024 – 0.050]**	**0.033** **[0.021 – 0.047]**	**0.025** **[0.015 – 0.037]**

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Table 5: Regression coefficients for effect of group-based trajectories on **school-related** COVID adaptations (mediation)

	Neg School	CS School	Bothers	School Events	Peer Disengagement
Improving group	-0.053 [-0.220 – 0.330]	0.158* [0.011 – 0.303]	-0.058 [-0.171 – 0.056]	0.025 [-0.160 – 0.209]	0.058 [-0.109 – 0.220]
Deteriorating group	0.288 [0.100 – 0.476]	0.187* [0.088 – 0.290]	-0.166* [-0.246 – -0.092]	-0.128* [-0.255 – -0.004]	-0.072 [-0.042 – 0.182]
Proportion Variance Explained	**0.042** **[0.029 – 0.057]**	**0.030** **[0.020 – 0.043]**	**0.028** **[0.018 – 0.040]**	**0.034** **[0.022 – 0.047]**	**0.015** **[0.008 – 0.025]**

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	Model 1	Model 2
Gender	10.161* [8.318 — 12.015]	10.003* [8.217 — 11.793]
Mothers Age	0.129 [-0.080 — 0.331]	0.161 [-0.042 — 0.367]
Household Size	-0.468 [-1.350 — 0.430]	-0.259 [-1.153 — 0.658]
Foreign Born	1.935 [-0.320 — 4.168]	1.962 [-0.257 — 4.130]
Disability	5.339* [3.065 — 7.589]	3.975 [1.744 — 6.213]
Family Class	0.466 [-0.299 — 1.234]	0.760 [-0.006 — 1.526]
Urban resident	4.527* [2.629 — 6.432]	4.464* [2.596 — 6.319]
Maternal Depression	1.395* [1.133 — 1.657]	1.227* [0.973 — 1.496]
Changed school	5.271* [3.413 — 7.211]	5.353* [3.540 — 7.219]
Improving group		3.138 [-0.632 — 6.983]
Deteriorating group		11.479* [8.913 — 14.082]
Proportion Variance Explained	**0.106** **[0.086 — 0.127]**	**0.127** **[0.106 — 0.149]**

Table 6 Regression coefficients: Psychological well-being during COVID based on background characteristics and group-based trajectories of mental health

Table 6 Regression coefficients: Psychological well-being during COVID based on background, group-based trajectories and adaptations

	Model 3	Model 4
Improving Group	1.785 [-1.605 — 5.183]	1.277 [-1.967 — 4.558]
Deteriorating Group	7.838* [5.502 — 10.133]	8.621* [6.398 — 10.992]
Negative School Learning	5.725* [5.092 — 6.365]	
Covid Stress – School	4.377* [3.524 — 5.237]	
Bothers	-5.645* [-6.726 — -4.578]	
School Events	-0.294 [-1.070 — 0.485]	
Peer Disengagements	-0.621 [-1.330 — 0.089]	
Negative Home Learning		1.960* [1.490 — 2.442]
Covid Stress – Family		4.667* [3.901 — 5.427]
Parental Support		-7.061* [-8.122 — -6.002]
Family Conflict		5.942* [5.144 — 6.771]
Family Rituals		0.556 [-0.111 — 1.235]
Proportion Variance Explained	**0.301** **[0.276 — 0.326]**	**0.327** **[0.302 — 0.353]**

Table 6 Regression Coefficients: Full model (Background characteristics not shown)

	Model 5
Improving Group	0.910 [-2.190 — 4.075]
Deteriorating Group	6.724* [4.597 — 8.846]
Negative School Learning	4.097* [3.481 — 4.703]
Covid Stress – School	2.782* [1.955 — 3.590]
Bothers	-4.145* [-5.168 — -3.156]
School Events	-0.746* [-1.493 — -0.016]
Peer Disengagements	0.045 [-0.601 — 0.727]
Negative Home Learning	1.081* [0.628 — 1.550]
Covid Stress – Family	3.423* [2.687 — 4.160]
Parental Support	-5.786* [-6.805 — -4.756]
Family Conflict	4.708* [3.924 — 5.491]
Family Rituals	0.382 [-0.274 — 1.047]
Proportion Variance Explained	**0.400** **[0.376 — 0.424]**

Conclusions

- In the midst of mass disruption, we find some, albeit limited continuity in psychological wellbeing among 12/13 year olds (regardless of gender).
  - Test-retest correlations are low
  - Those deteriorating prior to COVID saw an 11 point increase in poor PWB
  - But trajectories of PWB in childhood explain relatively little of variance in PWB during COVID
    - Holds regardless of how we model trajectories.

- We found minimum evidence of statistical mediation or moderation in that COVID19 disruptions affected most children directly and negatively.
  - Some evidence that prior PWB shapes how people perceived/experienced the pandemic adaptations
    - Effects are not large
  - Pandemic adaptations explain most of the variance in PWB during COVID (75%)

Conclusions (cont'd)

- Clear evidence of emergent mental health problems associated with COVID
  - Children who's PWB was worsening experienced greater problems
    - Identification and intervention
  - Some schools and households did better and some did worse
    - Implications for policy – what could we have done differently in response to the pandemic
      - Better bridges between social domains during crisis periods
        - Normalization efforts
  - Further study of trajectories through adolescence
    - Was COVID a turning point in the PWB of some children?
    - What factors influence better or worse post-COVID adaptations?

Further analyses

- Repeat analysis for '98 cohort
- Compare across both cohorts

Limitations

- Attrition esp. in online data collection
- RMF: access to other controls e.g. age at puberty