

Supplementary Material

Manuscript title: Quality of life and mental health in children and adolescents during the first year of the COVID-19 pandemic: Results of a two-wave nationwide population-based study

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Supplementary Table 1. Self-developed COVID-19 pandemic-specific items

Construct	Item	Response categories
Overall burden (children)	How difficult / burdensome were the changes related to the pandemic for you overall?	1 (“not at all difficult / burdensome”) to 5 (“very difficult / burdensome”)
Overall burden (parents)	How burdensome were the changes related to the pandemic for you overall?	1 (“not at all burdensome”) to 5 (“very burdensome”)
School closures (children)	How do you perceive schooling and learning / work now compared to a regular school or work day?	1 (“a lot more difficult”) to 5 (“much less difficult”)
Social contacts (children)	How much are you in contact with your friends or people outside your family compared to before the pandemic?	1 (“much less”) to 5 (“a lot more”)
	How difficult / burdensome were those changes in relationships to your friends for you?	1 (“not difficult / burdensome at all”) to 5 (“very difficult / burdensome”)
Family conflicts (children)	To what degree did the frequency of arguments in your family change compared to before the pandemic?	1 (“a lot more”) to 5 (“much less”)
	Sometimes on special occasions arguments escalate unfortunately between parents and children. Compared to before the pandemic this happened to us...	1 (“much less”) to 5 (“a lot more”) and 6 (“this does not happen at all”)
Changes in occupational status (parents)	How burdensome were the changes in your occupational status for you?	1 (“not at all burdensome”) to 5 (“very burdensome”)

Supplementary Table 2. Predictors of emotional problems, conduct problems, hyperactivity and peer problems in children and adolescents during the pandemic

	Emotional problems ^{ab}			Conduct problems ^{ab}			Hyperactivity ^{ab}			Peer problems ^{ab}		
	B	95 % CI		B	95 % CI		B	95 % CI		B	95 % CI	
		LL	UL		LL	UL		LL	UL		LL	UL
<i>Intercept</i>	1.30	1.16	1.45	1.92	1.81	2.03	3.75	3.60	3.91	2.13	2.00	2.26
Effect of time	0.18*	0.09	0.28	-0.01	-0.09	0.07	-0.12*	-0.22	-0.03	0.10*	0.01	0.18
Female	-0.63*	-1.26	-0.01	-0.56*	-1.04	-0.08	-0.83*	-1.50	-0.17	-0.18	-0.75	0.39
Age	-0.13*	-0.16	-0.10	-0.11*	-0.14	-0.08	-0.24*	-0.28	-0.21	0.01	-0.03	0.04
Female*age	0.08*	0.03	0.13	0.03	-0.01	0.07	0.01	-0.04	0.06	-0.01	-0.05	0.04
Migration background	0.13	-0.10	0.35	0.12	-0.05	0.29	0.01	-0.23	0.24	0.11	-0.09	0.32
Low parental education	0.28*	0.08	0.48	0.26*	0.11	0.42	0.35*	0.14	0.56	0.21*	0.03	0.39
Single parenthood	0.25*	0.04	0.47	0.17*	0.01	0.33	0.24*	0.01	0.47	0.34*	0.15	0.54
Living space	-0.01*	-0.01	0.00	0.00	-0.01	0.00	-0.01	-0.01	0.00	0.00*	-0.01	0.00
Parental mental illness	0.87*	0.59	1.15	0.30*	0.08	0.52	0.35*	0.06	0.63	0.55*	0.30	0.80
Parental burden due to the pandemic	0.69*	0.44	0.93	0.27*	0.07	0.46	0.53*	0.29	0.78	0.31*	0.10	0.53
Changes in occupational status	0.31*	0.14	0.47	0.19*	0.06	0.32	0.18*	0.02	0.35	0.10	-0.04	0.25
Family conflicts	0.89*	0.57	1.21	0.75*	0.51	1.00	0.68*	0.37	0.99	0.23	-0.05	0.50
Escalation of conflicts	0.48*	0.21	0.74	0.64*	0.43	0.85	0.27*	0.01	0.54	0.09	-0.14	0.32
Family climate ^c	-0.65*	-0.80	-0.50	-0.79*	-0.90	-0.67	-0.85*	-0.97	-0.68	-0.42*	-0.55	-0.29
Social support ^c	-0.37*	-0.49	-0.24	-0.32*	-0.41	-0.22	-0.39*	-0.52	-0.27	-0.43*	-0.54	-0.33
Model fit (adj. R ²)	0.699			0.691			0.796			0.708		

Note. ^a parent-report, 7-17 years; ^b higher values indicate stronger symptoms; ^c higher values indicate stronger resources; * $p < .05$

Supplementary Table 3. Time-constant factors moderating the relationships between wave 2 and HRQoL and mental health in children and adolescents during the pandemic

	HRQoL ^{ac}			Mental health problems ^{bd}			Anxiety ^{ad}			Depressive symptoms ^{ad}			Psychosomatic complaints ^{ad}			Emotional problems ^{bd}			Conduct problems ^{bd}			Hyperactivity ^{bd}			Peer problems ^{bd}		
	B	95 % CI		B	95 % CI		B	95 % CI		B	95 % CI		B	95 % CI		B	95 % CI		B	95 % CI		B	95 % CI		B	95 % CI	
		LL	UL		LL	UL		LL	UL		LL	UL		LL	UL		LL	UL		LL	UL		LL	UL		LL	UL
Intercept	45.97	45.05	46.88	9.21	8.79	9.62	5.34	4.83	5.85	10.74	10.30	11.18	1.39	1.32	1.46	1.33	1.17	1.49	1.96	1.84	2.08	3.75	3.58	3.91	2.14	1.99	2.28
Effect of time	-0.13	-1.08	0.82	0.03	-0.36	0.41	0.04	-0.44	0.53	0.08	-0.38	0.54	0.05	-0.02	0.12	0.14	-0.02	0.29	-0.09	-0.21	0.04	-0.11	-0.26	0.04	0.09	-0.05	0.22
Female	2.58*	-2.69	7.84	-2.23*	-3.92	-0.55	-2.80	-5.83	0.22	-1.48	-4.00	1.03	-0.19	-0.60	0.22	-0.64*	-1.27	-0.01	-0.56*	-1.04	-0.08	-0.85*	-1.51	-0.18	-0.18	-0.75	0.39
Age	0.42*	0.12	0.72	-0.47*	-0.57	-0.37	-0.32*	-0.49	-0.15	-0.12	-0.27	0.02	-0.02	-0.04	0.01	-0.14*	-0.18	-0.10	-0.11*	-0.13	-0.08	-0.25*	-0.29	-0.21	0.02	-0.01	0.06
Female*age	-0.24	-0.60	0.13	0.11	-0.02	0.25	0.29*	0.08	0.50	0.14	-0.03	0.32	0.02	-0.01	0.05	0.08*	0.03	0.13	0.03	-0.01	0.06	0.01	-0.04	0.06	-0.01	-0.05	0.04
Migration background	-1.10	-2.33	0.13	0.18	-0.51	0.86	-0.50	-1.18	0.19	0.23	-0.36	0.82	0.08	-0.02	0.17	0.07	-0.19	0.34	0.02	-0.18	0.22	0.02	-0.25	0.29	0.05	-0.18	0.29
Low parental education	0.08	-1.05	1.21	1.06*	0.44	1.68	-0.33	-0.95	0.29	-0.08	-0.62	0.46	-0.04	-0.13	0.04	0.28*	0.04	0.52	0.17	-0.02	0.36	0.46*	0.22	0.71	0.19	-0.03	0.40
Single parenthood	-0.84	-1.95	0.27	0.95*	0.30	1.60	0.66*	0.04	1.28	0.38	-0.15	0.91	0.06	-0.02	0.15	0.17	-0.08	0.41	0.23*	0.03	0.42	0.21	-0.05	0.46	0.34*	0.12	0.56
Living space	0.01	-0.02	0.04	-0.03*	-0.04	-0.01	-0.01	-0.03	0.00	0.00	-0.01	0.02	0.00*	0.00	0.00	-0.01	-0.02	0.00	-0.01	-0.01	0.00	0.00	-0.01	0.00	-0.01	-0.01	0.00
Parental mental illness	-1.92*	-3.60	-0.23	1.83*	0.93	2.73	1.01*	0.11	1.91	1.22*	0.41	2.03	0.20*	0.07	0.33	0.83*	0.48	1.18	0.37*	0.09	0.64	0.37*	0.02	0.73	0.33*	0.03	0.64
Parental burden due to the pandemic	-2.36*	-3.56	-1.16	1.76*	1.14	2.38	1.27*	0.63	1.91	1.28*	0.70	1.86	0.16*	0.07	0.25	0.69*	0.45	0.94	0.26*	0.07	0.45	0.53*	0.28	0.77	0.32*	0.11	0.53
Changes in occupational status	-1.50*	-2.30	-0.69	0.75*	0.33	1.17	0.43*	0.00	0.87	0.82*	0.44	1.21	0.11*	0.05	0.18	0.30*	0.14	0.47	0.19*	0.06	0.31	0.18*	0.02	0.35	0.11	-0.04	0.25
Family conflicts	-2.12*	-3.78	-0.46	2.40*	1.60	3.20	0.52	-0.37	1.40	1.45*	0.65	2.24	0.28*	0.16	0.40	0.86*	0.54	1.18	0.76*	0.51	1.00	0.67*	0.36	0.99	0.23	-0.05	0.51
Escalation of conflicts	-1.32	-2.69	0.04	1.39*	0.72	2.06	0.98*	0.26	1.69	0.84*	0.19	1.49	0.17*	0.07	0.27	0.48*	0.21	0.75	0.64*	0.43	0.84	0.27*	0.01	0.54	0.08	-0.15	0.32
Family climate ^c	3.49*	2.79	4.19	-2.64*	-3.02	-2.26	-0.97*	-1.35	-0.60	-1.46*	-1.79	-1.12	-0.21*	-0.26	-0.16	-0.65*	-0.80	-0.50	-0.79*	-0.91	-0.68	-0.82*	-0.97	-0.67	-0.43*	-0.56	-0.30
Social support ^c	2.85*	2.28	3.42	-1.49*	-1.80	-1.18	-0.61*	-0.92	-0.30	-0.89*	-1.16	-0.61	-0.09*	-0.14	-0.05	-0.37*	-0.49	-0.24	-0.32*	-0.41	-0.22	-0.40*	-0.52	-0.27	-0.43*	-0.54	-0.32
Wave 2*Female	-0.39	-1.37	0.59	0.02	-0.46	0.51	-0.11	-0.61	0.39	0.20	-0.27	0.68	0.03	-0.04	0.11	-0.02	-0.22	0.18	0.09	-0.07	0.25	0.04	-0.15	0.23	-0.09	-0.26	0.08
Wave 2*Age	-0.33*	-0.58	-0.07	-0.01	-0.08	0.06	0.12	-0.01	0.25	0.11	-0.01	0.24	0.01	-0.01	0.03	0.02	-0.01	0.05	-0.01	-0.03	0.02	0.02	-0.01	0.05	-0.04*	-0.06	-0.01
Wave 2*Migration background	0.32	-1.07	1.71	0.37	-0.31	1.05	1.01*	0.31	1.72	0.02	-0.65	0.69	0.02	-0.08	0.12	0.09	-0.18	0.37	0.18	-0.04	0.40	-0.02	-0.29	0.24	0.12	-0.12	0.35
Wave 2*Low parental education	1.26	-0.04	2.56	0.00	-0.65	0.65	0.30	-0.36	0.96	-0.21	-0.84	0.42	0.00	-0.09	0.10	0.00	-0.26	0.27	0.18	-0.03	0.39	-0.21	-0.47	0.04	0.02	-0.20	0.25
Wave 2*Single parenthood	-0.73	-1.96	0.50	0.15	-0.48	0.78	0.00	-0.62	0.62	0.53	-0.06	1.13	0.11*	0.02	0.20	0.19	-0.07	0.44	-0.12	-0.32	0.09	0.07	-0.18	0.32	0.01	-0.21	0.24
Wave 2*Living space	0.01	-0.03	0.04	0.01*	0.00	0.03	0.00	-0.02	0.01	-0.01	-0.03	0.00	0.00	-0.01	0.00	0.01*	0.00	0.01	0.01*	0.00	0.01	0.00	-0.01	0.01	0.00*	0.00	0.01
Wave 2*Parental mental illness	1.07	-1.02	3.16	0.34	-0.68	1.36	0.42	-0.65	1.49	-0.03	-1.04	0.97	-0.06	-0.22	0.09	0.09	-0.33	0.50	-0.14	-0.47	0.19	-0.03	-0.44	0.37	0.41*	0.05	0.76
Model fit (adj. R ²)	0.663			0.812			0.464			0.628			0.682			0.701			0.692			0.796			0.712		

Note. ^a self-report, 11-17 years; ^b parent-report, 7-17 years; ^c higher values indicate better HRQoL; ^d higher values indicate stronger symptoms and complaints; ^e higher values indicate stronger resources; * $p < .05$