

Supplemental materials

Titel: Secular trend of psychological distress in the context of childhood obesity - data from the CHILT III programme, Cologne

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Included supplemental materials:

Table S1-S3

Table S1: Descriptive statistics of all time clusters separated by sex

Overall (boys <i>n</i> = 133) (girls <i>n</i> = 129)	2005-2006 (boys <i>n</i> = 15) (girls <i>n</i> = 25)	2007-2008 (boys <i>n</i> = 19) (girls <i>n</i> = 19)	2009-2011 (boys <i>n</i> = 14) (girls <i>n</i> = 20)	2012-2014 (boys <i>n</i> = 22) (girls <i>n</i> = 20)	2015-2017 (boys <i>n</i> = 20) (girls <i>n</i> = 25)	2018-2020 (boys <i>n</i> = 23) (girls <i>n</i> = 20)	<i>p-value</i>
(1) sex n (%)							
male	15 (37.5%)	19 (50.0%)	14 (41.2%)	22 (52.4%)	20 (44.4%)	23 (53.5%)	
female	25 (62.5%)	19 (50.0%)	20 (58.8%)	20 (47.6%)	25 (55.6%)	20 (46.5%)	
(2) age (in years)							
boys	12.2 ± 2.5 (15)	13.3 ± 1.8 (19)	12.3 ± 1.9 (14)	13.0 ± 2.0 (22)	12.6 ± 2.5 (20)	12.8 ± 1.7 (23)	.632 [†]
girls	12.3 ± 1.9 (25)	12.6 ± 2.2 (19)	12.9 ± 1.5 (20)	11.8 ± 3.0 (20)	12.3 ± 2.1 (25)	12.0 ± 2.2 (20)	.626 [†]
(3) height (in m)							
boys	1.56 ± 0.13 (15)	1.66 ± 0.12 (19) [‡]	1.58 ± 0.11 (14)	1.65 ± 0.11 (22) [‡]	1.57 ± 0.14 (20)	1.62 ± 0.12 (23)	.144 [†]
girls	1.57 ± 0.09 (25)	1.57 ± 0.12 (19)	1.56 ± 0.07 (20)	1.52 ± 0.09 (20)	1.55 ± 0.10 (25)	1.58 ± 0.09 (20)	.506 [†]
(4) weight (in kg)							
boys	79.9 ± 24.7 (15)	83.5 ± 22.0 (19)	72.5 ± 18.0 (14)	87.5 ± 16.5 (22) [‡]	78.3 ± 27.2 (20)	82.6 ± 23.7 (23)	.483 [†]
girls	71.2 ± 14.8 (25)	72.9 ± 17.9 (19)	74.6 ± 12.9 (20)	67.1 ± 14.7 (20)	71.3 ± 16.7 (25)	76.3 ± 17.8 (20)	.547 [†]
(5) BMI (in kg/m²)							
boys	30.6 ± 5.6 (15)	29.8 ± 4.7 (19)	28.6 ± 4.2 (14)	32.1 ± 4.6 (22) [‡]	31.1 ± 7.5 (20)	30.8 ± 5.0 (23)	.525 [†]
girls	28.8 ± 4.3 (25)	29.0 ± 4.1 (19)	30.5 ± 3.9 (20)	28.6 ± 3.7 (20)	29.2 ± 4.6 (25)	30.1 ± 4.4 (20)	.621 [†]
(6) BMI-SDS							
boys	2.53 ± 0.45 (15)	2.32 ± 0.41 (19)	2.28 ± 0.51 (14)	2.57 ± 0.51 (22)	2.49 ± 0.48 (20)	2.44 ± 0.47 (23)	.397 [†]
girls	2.34 ± 0.53 (25)	2.41 ± 0.39 (19)	2.51 ± 0.41 (20)	2.46 ± 0.46 (20)	2.43 ± 0.44 (25)	2.58 ± 0.41 (20)	.559 [†]

overall (boys <i>n</i> = 97) (girls <i>n</i> = 108)	2005-2006 (boys <i>n</i> = 13) (girls <i>n</i> = 18)	2007-2008 (boys <i>n</i> = 17) (girls <i>n</i> = 19)	2009-2011 (boys <i>n</i> = 14) (girls <i>n</i> = 15)	2012-2014 (boys <i>n</i> = 15) (girls <i>n</i> = 15)	2015-2017 (boys <i>n</i> = 16) (girls <i>n</i> = 23)	2018-2020 (boys <i>n</i> = 22) (girls <i>n</i> = 18)	
(7) migration background (yes)							
boys	1 (7.7%)	1 (5.9%)	1 (7.1%)	3 (20.0%)	1 (6.3%)	3 (13.6%)	.749 [#]
girls	1 (5.6%)	2 (10.5%)	0 (0.0%)	3 (20.0%)	2 (8.7%)	5 (27.8%)	.148 [#]
(8) media consumption (in h/day)							
boys	1.63 ± 0.75 (13)	1.74 ± 0.96 (17)	0.89 ± 0.55 (14) [†]	1.39 ± 0.88 (15)	6.52 ± 4.69 (16)	6.65 ± 4.42 (22)	<.001 [†]
girls	2.10 ± 1.30 (18)	1.60 ± 0.98 (19)	1.77 ± 1.05 (15)	1.49 ± 0.92 (15)	4.37 ± 2.47 (23)	6.05 ± 3.81 (18)	<.001 [†]

The data are presented as the mean ± SD; BMI = body mass index; BMI SDS = Body mass index standard deviation score; p-values calculated with the [†] analysis of variance (ANOVA); [‡] unpaired t-test, [#] Chi square test; p < 0.05;

Table S2: Results analysing differences in the domains of self-concept over time separated by sex

periods of time								
	Overall (boys <i>n</i> = 133) (girls <i>n</i> = 129)	2005-2006 (boys <i>n</i> = 15) (girls <i>n</i> = 25)	2007-2008 (boys <i>n</i> = 19) (girls <i>n</i> = 19)	2009-2011 (boys <i>n</i> = 14) (girls <i>n</i> = 20)	2012-2014 (boys <i>n</i> = 22) (girls <i>n</i> = 20)	2015-2017 (boys <i>n</i> = 20) (girls <i>n</i> = 25)	2018-2020 (boys <i>n</i> = 23) (girls <i>n</i> = 20)	<i>p</i> -value [†]
(1) physical appearance								
boys	55.8 ± 15.4	50.0 ± 14.7	52.7 ± 19.3	57.7 ± 11.4	54.2 ± 14.3	59.8 ± 15.7	59.2 ± 15.0	.269
girls	53.5 ± 15.9	49.4 ± 14.6	50.2 ± 11.9	57.4 ± 13.2	57.1 ± 17.4	54.0 ± 17.9	53.5 ± 18.8	.220
(2) social competence								
boys	75.4 ± 18.8	75.6 ± 19.2	70.6 ± 23.1	80.4 ± 21.5	72.8 ± 16.9	73.5 ± 19.7	80.5 ± 12.9	.505
girls	76.5 ± 18.4	78.4 ± 19.5	80.9 ± 19.4	78.0 ± 16.6	79.0 ± 13.1	71.3 ± 19.1	72.8 ± 21.0	.519
(3) scholastic competence								
boys	75.6 ± 16.7	78.9 ± 18.4	76.6 ± 14.2	82.2 ± 16.9	72.0 ± 17.0	71.9 ± 14.3	75.2 ± 19.1	.414
girls	74.9 ± 16.5	72.3 ± 20.1	78.7 ± 15.6	77.1 ± 12.7	74.8 ± 14.8	72.4 ± 17.3	75.4 ± 17.5	.757
(4) behavioral conduct								
boys	73.5 ± 16.7	75.8 ± 18.0	70.9 ± 18.5	83.3 ± 16.3	73.1 ± 16.8	67.5 ± 13.6	73.5 ± 15.8	.219
girls	74.5 ± 15.9	74.3 ± 16.9	78.1 ± 14.6	77.6 ± 14.9	70.6 ± 18.8	74.4 ± 13.4	72.4 ± 17.1	.579
(5) global self worth								
boys	71.9 ± 15.9	76.3 ± 13.0	69.9 ± 16.6	80.7 ± 13.6	67.4 ± 14.9	68.2 ± 18.1	72.9 ± 15.9	.219
girls	73.4 ± 16.1	72.6 ± 18.8	69.8 ± 17.6	73.5 ± 11.7	72.5 ± 12.7	75.2 ± 17.9	76.3 ± 16.8	.819

The data are presented as the mean \pm SD; p-values are calculated with an [†] analysis of covariance (ANCOVA) adjusted for age, adolescent status and BMI-SDS

Table S3: Results of the ANCOVA analysing the domains of self-concept adjusted for sex, age, BMI SDS, adolescent status, migration background, media consumption and physical fitness

	periods of time							
	Overall (n = 205)	2005-2006 (n = 31)	2007-2008 (n = 36)	2009-2011 (n = 29)	2012-2014 (n = 30)	2015-2017 (n = 39)	2018-2020 (n = 40)	<i>p-value</i> [†]
(1) physical appearance	54.8 \pm 16.0	51.0 \pm 15.1	51.4 \pm 15.9	59.2 \pm 12.3	56.2 \pm 17.2	54.7 \pm 16.8	56.5 \pm 17.0	.466
(2) social competence	76.5 \pm 18.4	77.2 \pm 17.8	76.4 \pm 21.2	81.4 \pm 17.8	74.9 \pm 15.4	72.6 \pm 20.2	77.6 \pm 16.7	.476
(3) scholastic competence	76.3 \pm 16.2	78.1 \pm 17.4	77.7 \pm 15.0	80.9 \pm 14.5	72.9 \pm 16.2	74.0 \pm 15.2	74.9 \pm 18.4	.534
(4) behavioral conduct	74.7 \pm 16.3	77.0 \pm 15.9	74.4 \pm 17.2	83.1 \pm 14.2	70.8 \pm 17.4	71.8 \pm 13.9	72.8 \pm 16.6	.101
(5) global self worth	73.1 \pm 16.6	76.0 \pm 16.6	69.7 \pm 17.2	77.9 \pm 13.1	69.0 \pm 15.6	72.2 \pm 19.0	74.2 \pm 16.3	.237

The data are presented as the mean \pm SD; p-values are calculated with an [†] analysis of covariance (ANCOVA) adjusted by sex, age, BMI SDS, adolescent status, migration background, media consumption and physical fitness