

Is subjective wellbeing related to ~~blood pressure~~ overweight in children? A preliminary analysis

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Our interest.....

Relationship between subjective wellbeing and physiological outcomes in children

→ Are there physiological effects of high/low subjective wellbeing that impact physical health?





Child living in poverty-
What is the child's
subjective wellbeing?



✓/X



X



?

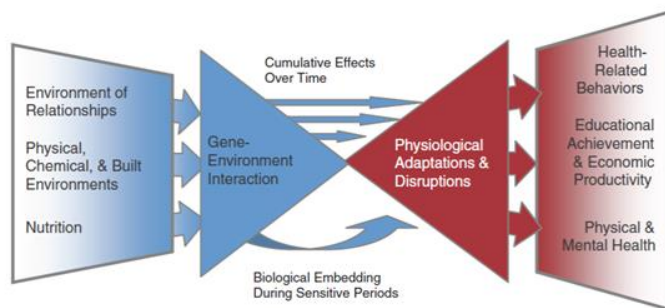


FIGURE 3-2 A biodevelopmental framework can relate the multiple influences during development to lifelong outcomes.
SOURCE: Center on the Developing Child at Harvard University, 2010b. Reprinted with permission. Copyright 2010 Center on the Developing Child at Harvard University.

Can we measure subjective wellbeing and health together?

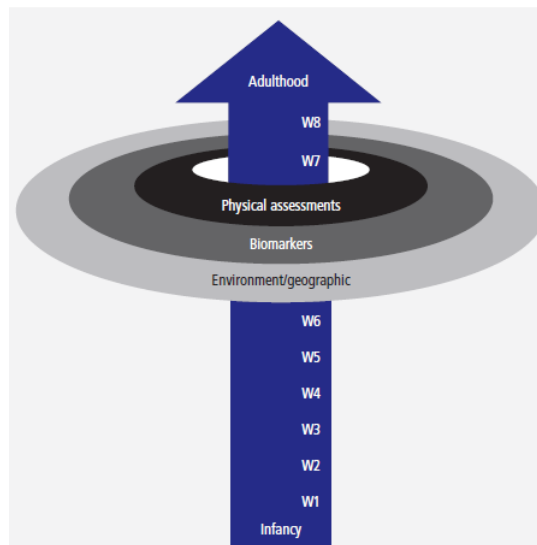
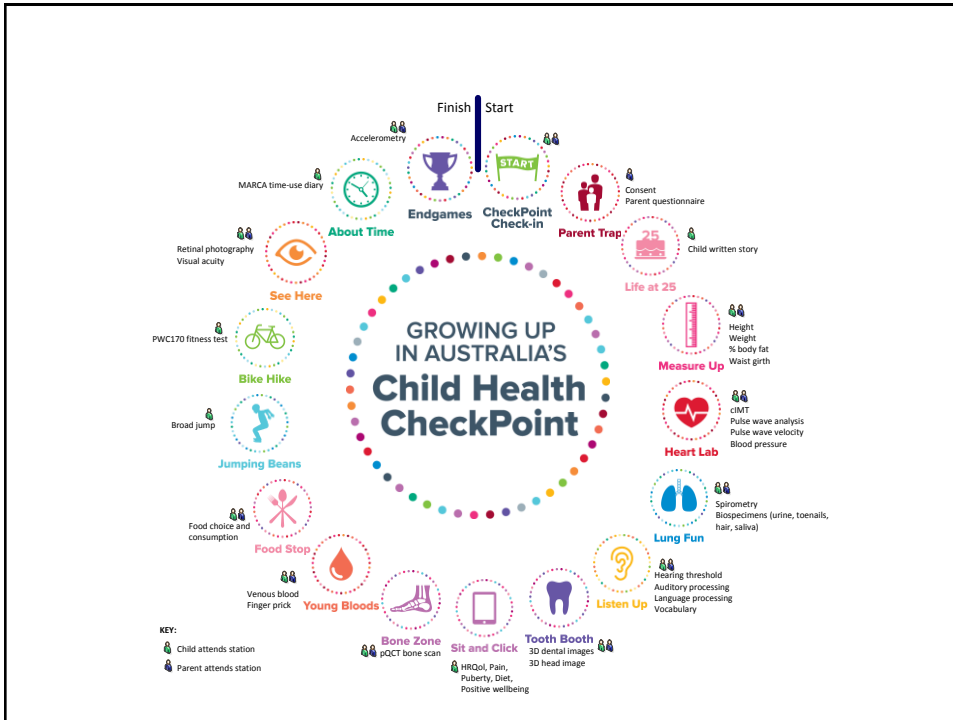


Figure 1: Conceptualisation of the integration of the Child Health CheckPoint into LSAC



International Children's Study

- One overall wellbeing question (the Overall Life Satisfaction item) and the brief Multidimensional Student Life Satisfaction Scale (4 items) focussing on family and friends.

Subjective wellbeing and health: a conceptual challenge

Alternative definitions of wellbeing



Mental state



Subjective wellbeing
Happiness
Mental health

Objective characteristics

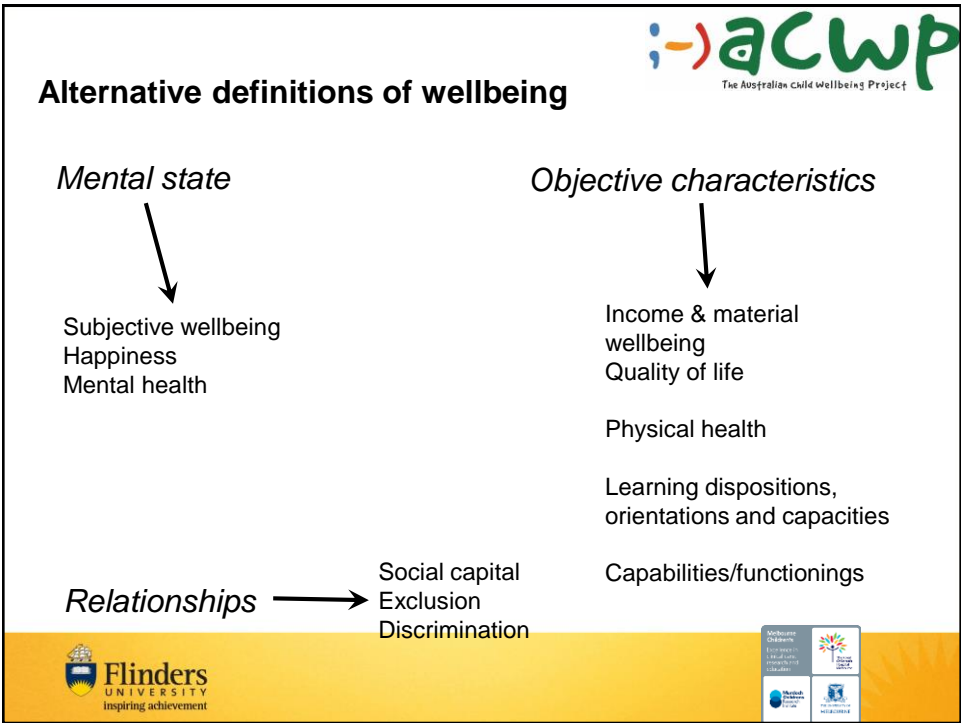
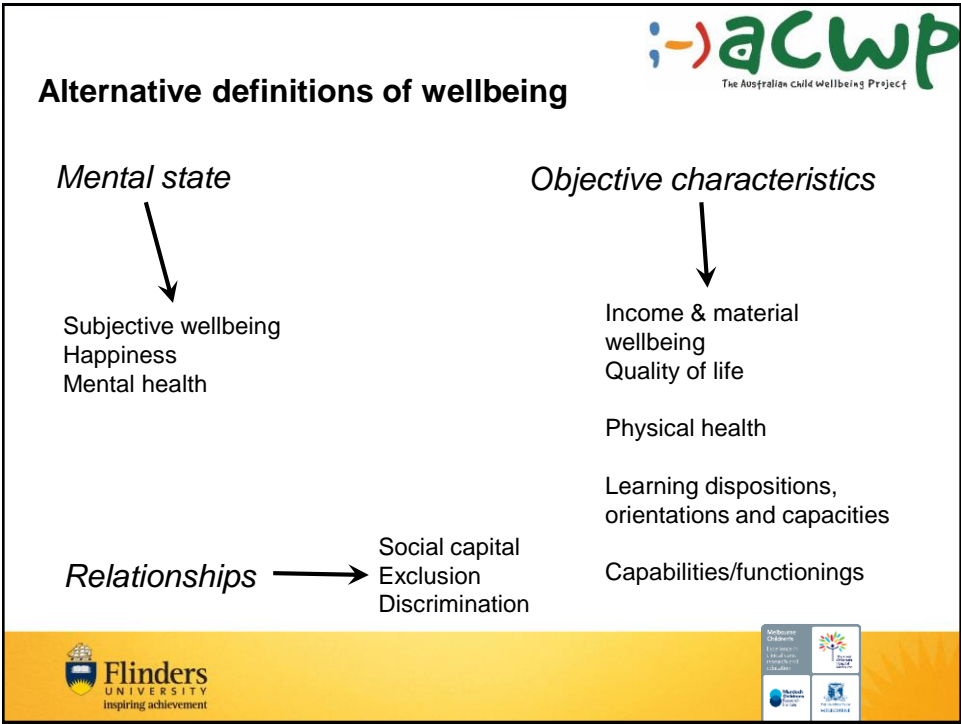


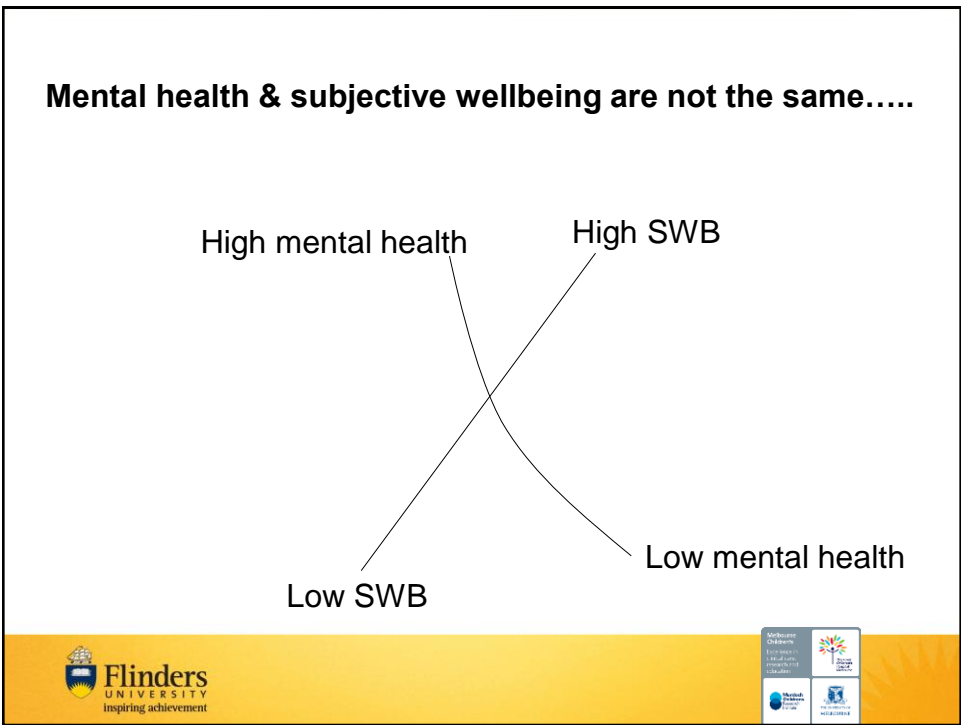
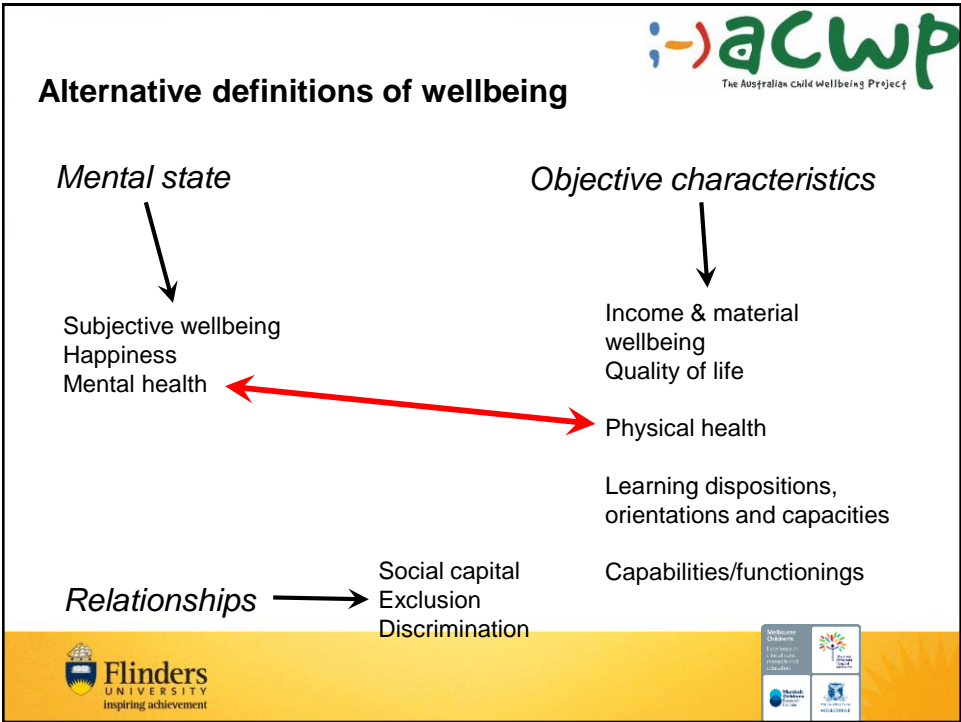
Income & material
wellbeing
Quality of life

Physical health

Learning dispositions,
orientations and capacities

Capabilities/functionings





Can we measure the relationship between mental and physical health: the chicken or the egg?

What do we know about the relationship between children's mental health & weight?

- Cross-sectional data consistently shows a relationship between mental health and overweight/obesity in children.
- However, the longitudinal trajectories are complicated
 - Obesity → mental health problems: some evidence
 - Mental health problems → obesity: less evidence

Data for our analysis: Longitudinal Study of Australian Children (*Growing Up in Australia* study)

Longitudinal Study of Australian Children ('K' Cohort)

- 4,983 children born in 1999 and sampled throughout Australia (+ 'B' Cohort - 5,010 children born in 2003)
- 5 waves of interviews to date (ages 4, 6, 8, 10 & 12 years)
- Personal interviews with parents, teachers and children
- Weight & height recorded by researcher
- data on cognitive, social and emotional development & mental health measures (SDQ & PEDS-QL).
- nationally representative



Definitions & measures of weight

Weight:

- Look at changes in BMI z-scores:
 - 0.25, 0.50 & 0.75 SD.

Mental health

- Look at changes in SDQ & PEDS-QL
 - Measured in z-scores



Definitions & measures of mental health

- Strengths and Difficulties Questionnaire (SDQ)
 - A screening questionnaire for **social, emotional and behavioural functioning** in children aged 4-16 (Goodman, 1997; Vostanis, 2006).
 - Higher score → worse mental health
- Pediatric Quality of Life Inventory (PEDS-QL)
 - A measure of **health-related quality of life** in children aged 2 to 18 (Varni, Seid, & Kurtin, 2001).
 - Higher score → better mental health

Examining MH & BMI across 5 waves of data

	W1	W2	W3	W4	W5
Age (years)	4	6	8	10	12
Increased weight by 0.25, 0.5 or 0.75 SD between waves?	n	y n	y n	y n	y

Increasing weight between waves

	W1	W2	W3	W4	W5
Age (years)	4	6	8	10	12
Normal weight in W(t); increased weight by	0.25 SD in Wave(t+1)				
N		713	950	464	447
Waves (t-1) & (t), %		16.1	18.7	18.6	17.2
All waves, %		36.1	43.8	24.5	21.6
Normal weight in W(t); increased weight by	0.5 SD in Wave(t+1)				
N		399	465	176	159
Waves (t-1) & (t), %		8.2	9.2	7.5	6.2
All waves, %		19.9	24.4	10.4	8.0
Normal weight in W(t); increased weight by	0.75 SD in Wave(t+1)				
N		157	166	63	54
Waves (t-1) & (t), %		4.1	3.7	2.8	2.2
All waves, %		11.2	11.6	4.0	2.9

Did mental health measures get worse among children whose weight increased between waves?

Logistic regression

- Dependent – weight at Wave (t)
 - 0 no weight increase
 - 1 weight increase (0.25SD, 0.5SD & 0.75SD)

- Independent – SDQ & PEDS-QL (Z-Score) at Wave (t-1)

- Controls – sex, age (months), BMI at Wave (t-1), mother's education, income

Did mental health measures get worse among children whose weight increased between waves?

Odds ratios - Increase in weight = 0.25SD

	4 to 6	6to 8	8 to 10	10 to 12
SDQ				
Pro-Social	1.006	1.085	1.155	1.247 ***
Hyperactivity	1.003	1.074	1.039	1.058
Emotional	0.970	1.031	0.942	0.882
Peer Problems	1.057	1.040	1.078	1.190 **
Conduct Problems	1.039	0.970	1.169	1.376
SDQ Total	1.045	1.052	1.106	1.236 ***
PEDS				
Emotional	1.031	1.032	1.087	0.909
Social	0.910	0.878	0.913	1.008
Psychosocial	0.858 **	0.907	0.950	0.908
PEDS-QL Total	0.911 *	0.862 ***	0.938	0.940

Did mental health measures get worse among children whose weight increased between waves?

Increase in weight = 0.5SD

	4 to 6	6to 8	8 to 10	10 to 12
SDQ				
Pro-Social	0.923	1.009	1.170	1.189
Hyperactivity	1.004	0.999	1.045	1.048
Emotional	0.857	1.045	1.066	0.883
Peer Problems	1.072	1.069	1.192	1.184
Conduct Problems	0.968	0.848	1.086	1.453 ***
SDQ Total	0.959	0.952	1.233 *	1.308 ***
PEDS				
Emotional	1.120	1.033	1.022	0.886
Social	0.899	0.861	0.905	0.930
Psychosocial	0.973	0.850	0.861	0.814 *
PEDS-QL Total	0.963	0.851	0.814 *	0.859

Did mental health measures get worse among children whose weight increased between waves?

Increase in weight = 0.75SD

	4 to 6	6 to 8	8 to 10	10 to 12
SDQ				
Pro-Social	0.805	0.927	1.060	1.180
Hyperactivity	1.015	1.139	0.922	1.075
Emotional	0.794	0.948	0.983	0.999
Peer Problems	1.381	1.125	1.232	1.143
Conduct Problems	0.938	0.804	1.414 **	1.374
SDQ Total	1.140	1.016	1.383 *	1.390 *
PEDS				
Emotional	1.320	0.999	0.966	0.850
Social	0.791	0.887	0.995	0.842
Psychosocial	0.947	0.831	0.777	0.703 **
PEDS-QL Total	0.837	0.834	0.779	0.779

Conclusions

Analysis still at an early stage

Overall relationship between MH & BMI is not strong, but there are some significant relationships

- Non-clinical changes in MH associated with non-clinical changes in BMI (especially among older age children)

Conceptual implications....

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Relationships



Social capital
Exclusion
Discrimination

