

Supplementary material for *Academic performance, subsequent socioeconomic status, and suicide attempt in adulthood: path analyses on Swedish cohort data*

Table S1. Description of the study variables.

Variable	Variable type/categories	Time of measurement	Comment
Academic performance: grade point average	Continuous; standardized into a z score (mean=0, standard-deviation [SD]=1) separately for each birth year.	Birth years 1948/1953: the 6 th school year, at age approx. 13, in 1961/1966. Birth years 1967/1972: the 9 th school year, at age approx. 16, in 1983/1988.	Participants with fewer than 8 school subject grades (the limit for high school qualification for most of the cohorts) were excluded since this is mostly due to longstanding illness or other absence.
Childhood socio-economic status (SES): parents' occupational level	Binary: 1) High/non-manual (non-manual employees at low, intermediate and high level; and the self-employed in the later censuses), and 2) Low/manual level (unskilled and skilled workers, farmers, and those with no registered occupation).	Birth years 1948/1953: the 1960 census, at age 7/12. Birth years 1967/1972: the 1980/1985 censuses, at age 13.	Occupational level is categorized in 7 or 8 categories in the national censuses (self-employed was not a separate category in the 1960 census). Since these categories are not ranked on a strictly hierarchical scale, SES was dichotomized for the purpose of this study.
Parents' suicidal behaviour and psychiatric diagnosis	Binary: 1) No suicidal behaviour or psychiatric diagnoses and 2) Any suicidal behaviour or psychiatric diagnosis.	All years available until the end of the study. The Inpatient register: 1973-2013; the Cause of Death register: 1952-2013.	ICD codes for suicidal behaviour (non-fatal and fatal events): v.8, 950-59 and 980-89; v.9-10, X60-84 and Y10-34. ICD codes for psychiatric diagnoses: v.8, 290-315; v.9, 290-319; v.10, F00-F99 This variable captures primarily genetic liability, since data was available mainly in the participant's adulthood, but may also proxy early life events.
Childhood cognitive ability/IQ	Continuous; standardized into a z score (mean=0, SD=1) separately for each birth year.	In the 6 th school year, at age approx. 13, in 1961/1966/1980/1985.	The sum of three subtests (verbal ability: antonyms; spatial ability: metal folding; induction/reasoning: number series), with a maximum of 120 points, constitutes a

			measure of global cognitive ability or IQ. Each subtest has 40 items and a time limit of 10, 15 and 18 minutes, respectively. The test was administered to the participants by classroom teachers, according to written detailed instructions.
Educational attainment	Four categories, by level of education: primary and lower secondary (≤ 9 years); upper secondary, short track (10-11 years in total); upper secondary, long track (12-13 years in total); and post-secondary education.	<p>Birth years 1948/1953: 1992, at age 38/43.</p> <p>Birth years 1967/1972: 1992 /1997, at age 25 (when most had reached their final level of schooling).</p>	
Income	Continuous; log-transformed due to non-normal distribution, and then standardized into z scores (mean=0, SD=1).	Birth years 1948/1953: 1992, at age 38/43.	Because income is a poor measure of socio-economic status in early adulthood, we analysed income in the older cohort only.
Suicide attempt	Binary; 1) No event, or 2) Any event.	<p>Main analysis: From January 1st the year after the recording of educational level (birth years 1948/1953 and 1967: 1993; birth year 1972: 1998), until end of study, December 31st 2013.</p> <p>Age-matched analysis: from January 1st the year the participants turned 26 (birth years 1948/1953: 1974/1979; birth years 1967/1972: 1993/ 1998) until December 31st the year they turned 41 /46 (birth years 1948/1953: 1994; birth years 1967/ 1972: 2013).</p> <p>See timeline in Figure 1.</p>	ICD codes: v.8-9 (1973-1996), 950-59 and 980-89; v. 10, X60-84 and Y10-34.

Table S2. The hazard ratio (with 95% CI) for suicide attempt for an increase in predictors by one.

Predictor, pathway	Cohort	
	1950 HR (95% CI)	1970 HR (95% CI)
Education		
Direct=Total	0.89 (0.75; 1.04)	0.61 (0.48; 0.78)*
GPA		
Direct	1.01 (0.83; 1.23)	0.59 (0.47; 0.74)*
Via educ.	0.96 (0.91; 1.02)	0.75 (0.64; 0.86)*
Total	0.97 (0.80; 1.18)	0.44 (0.36; 0.54)*
IQ		
Direct	0.88 (0.71; 1.09)	1.00 (0.83; 1.20)
Via GPA	1.01 (0.89; 1.14)	0.74 (0.65; 0.84)*
Via educ.	0.98 (0.95; 1.01)	0.97 (0.95; 0.99)*
Via GPA educ.	0.98 (0.94; 1.01)	0.84 (0.78; 0.92)*
Total indirect	0.96 (0.84; 1.10)	0.60 (0.54; 0.68)*
Total	0.85 (0.73; 0.99)†	0.60 (0.52; 0.70)*

† $p < .05$, * $p < .001$

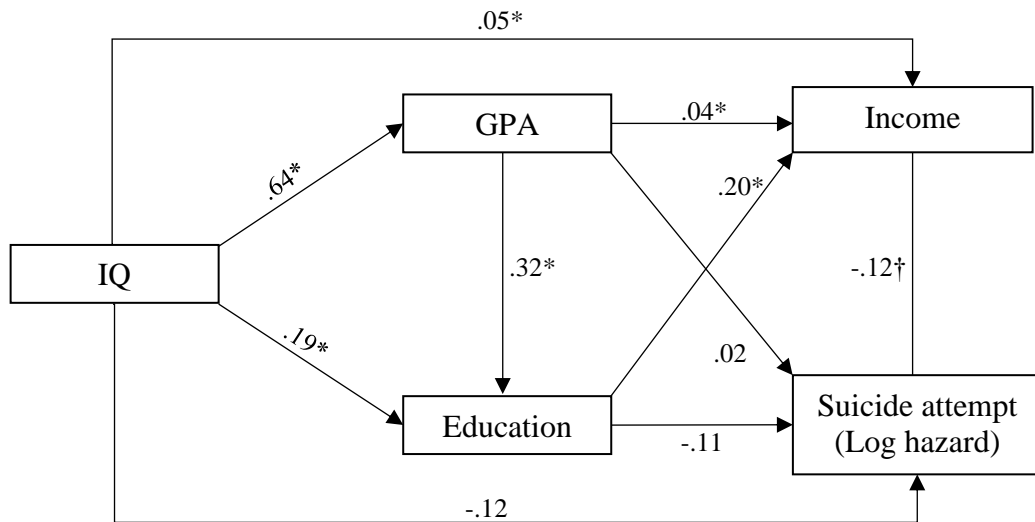


Figure S1. Associations between predictors and suicide attempt when including income (log transformed and standardized) as a third mediator in the 1950 cohort. The associations are adjusted for sex, childhood SEP, and parent's psychiatric diagnosis and suicidal behaviour. $^\dagger p < .05$, $* p < .001$.

Table S3. The hazard ratio (with 95% CI) for suicide attempt for an increase in predictors by one in the 1950 cohort.

Predictor, pathway	HR (95% CI)	Predictor, pathway	HR (95% CI)
Income		IQ	
Direct=Total	0.89 (0.81; 0.98)†	Direct	0.89 (0.72; 1.10)
Education		Via GPA	1.02 (0.90; 1.15)
Direct	0.89 (0.76; 1.06)	Via educ.	0.98 (0.95; 1.01)
Via inc.	0.98 (0.96; 1.00)†	Via inc	0.99 (0.99; 1.00)†
Total	0.87 (0.74; 1.03)	Via GPA educ.	0.98 (0.95; 1.01)
GPA		Via GPA inc.	1.00 (1.00; 1.00)
Direct	1.02 (0.84; 1.25)	Via educ. inc.	1.00 (0.99; 1.00)†
Via educ.	0.97 (0.92; 1.02)	Via GPA educ. inc.	1.00 (0.99; 1.00)†
Via inc.	1.00 (0.99; 1.00)	Total indirect	0.96 (0.84; 1.09)
Via educ. inc.	0.99 (0.99; 1.00)†	Total	0.85 (0.72; 0.99)†
Total indirect	0.95 (0.90; 1.01)		
Total	0.98 (0.80; 1.19)		

† $p < .05$, * $p < .001$

Table S4. The hazard ratio (with 95% CI) for suicide attempt for an increase in predictors by one, with a follow-up period between ages 26-41/46.

Predictor, pathway	Cohort	
	1950 HR (95% CI)	1970 HR (95% CI)
GPA		
Direct=Total	0.79 (0.67; 0.92)†	0.49 (0.42; 0.57)*
IQ		
Direct	0.83 (0.70; 0.97)†	0.99 (0.84; 1.17)
Via GPA	0.86 (0.77; 0.95)†	0.66 (0.61; 0.72)*
Total	0.71 (0.62; 0.80)*	0.66 (0.57; 0.75)*

† $p < .05$, * $p < .001$

Table S5. The hazard ratio (with 95% CI) for suicide attempt for an increase in predictors by one. Both including and excluding persons with psychiatric diagnosis, and using all or only certain suicide attempts (SA).

Predictor, pathway	Incl. Psych. Diag.		Excl. Psych. Diag.	
	All SA	Certain SA	All SA	Certain SA
The 1950 cohort				
Education				
Direct=Total	0.89 (0.75; 1.05)	0.88 (0.74; 1.05)	0.90 (0.76; 1.06)	0.89 (0.74; 1.07)
GPA				
Direct	1.01 (0.83; 1.23)	0.96 (0.78; 1.18)	1.02 (0.83; 1.25)	0.96 (0.77; 1.20)
Via educ.	0.96 (0.91; 1.02)	0.96 (0.91; 1.02)	0.97 (0.92; 1.02)	0.96 (0.91; 1.02)
Total	0.97 (0.80; 1.18)	0.92 (0.74; 1.13)	0.99 (0.80; 1.21)	0.92 (0.74; 1.15)
IQ				
Direct	0.88 (0.71; 1.09)	0.94 (0.75; 1.18)	0.88 (0.70; 1.10)	0.94 (0.74; 1.19)
Via GPA	1.01 (0.89; 1.14)	0.97 (0.85; 1.11)	1.01 (0.89; 1.16)	0.97 (0.84; 1.12)
Via educ.	0.98 (0.95; 1.01)	0.98 (0.94; 1.01)	0.98 (0.95; 1.01)	0.98 (0.94; 1.01)
Via GPA educ.	0.98 (0.94; 1.01)	0.97 (0.94; 1.01)	0.98 (0.94; 1.01)	0.98 (0.94; 1.01)
Total indirect	0.96 (0.84; 1.10)	0.92 (0.80; 1.06)	0.97 (0.84; 1.12)	0.93 (0.80; 1.08)
Total	0.85 (0.73; 0.99)†	0.87 (0.73; 1.02)	0.85 (0.72; 1.00)	0.87 (0.73; 1.04)
The 1970 cohort				
Education				
Direct=Total	0.61 (0.48; 0.78)*	0.61 (0.47; 0.79)*	0.67 (0.51; 0.87)†	0.66 (0.50; 0.88) †
GPA				
Direct	0.59 (0.47; 0.74)*	0.56 (0.44; 0.72)*	0.58 (0.45; 0.76)*	0.56 (0.42; 0.74)*
Via educ.	0.75 (0.65; 0.86)*	0.74 (0.64; 0.87)*	0.79 (0.67; 0.92)†	0.78 (0.67; 0.92)†
Total	0.44 (0.36; 0.54)*	0.42 (0.34; 0.52)*	0.46 (0.36; 0.57)*	0.44 (0.34; 0.56)*
IQ				
Direct	1.00 (0.83; 1.19)	1.00 (0.82; 1.21)	0.95 (0.79; 1.16)	0.95 (0.77; 1.17)
Via GPA	0.74 (0.65; 0.84)*	0.72 (0.62; 0.83)*	0.73 (0.63; 0.85)*	0.72 (0.61; 0.84)*
Via educ.	0.97 (0.95; 0.99)*	0.97 (0.95; 0.99)*	0.97 (0.96; 0.99)†	0.97 (0.95; 0.99)†
Via GPA educ.	0.85 (0.78; 0.92)*	0.84 (0.77; 0.92)*	0.87 (0.80; 0.95)†	0.87 (0.79; 0.96)†
Total indirect	0.60 (0.54; 0.68)*	0.59 (0.52; 0.67)*	0.62 (0.54; 0.71)*	0.61 (0.53; 0.70)*
Total	0.60 (0.52; 0.70)*	0.58 (0.50; 0.69)*	0.59 (0.51; 0.69)*	0.58 (0.49; 0.68)*

† $p < .05$, * $p < .001$