

Do relative socioeconomic deprivations impact on subjective health-related quality of life and behaviors among adolescents?

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Background & objectives

Background:

- Relative socioeconomic deprivations include: low parent-education, non-intact family, being an immigrant, low parent-occupation, and low income.
- They could impact on subjective well-being and unhealthy behaviours among adolescents which then persists in adulthood.
- May play mediating/moderating roles a wide range of covariates common among adolescents: low school-performance, lack of regular sports activity, obesity, being victim of violence or sexual abuse, involvement in violence, and suicidal ideation.

Objectives:

- To study, in an early adolescence context the associations between socioeconomic deprivations and:
 - Poor subjective health-related quality of life (physical health, psychological health, social relationships, and living environment),
 - Last-30-day substance use (alcohol, tobacco, cannabis, and other illicit drugs).
- and the mediating/moderating roles of previous covariates.

Population

- Students from three middle-schools from the Nancy urban area (410,000 inhabitants, Capital of Lorraine region (2.34 millions inhabitants in north-eastern France)):
 - 63 classes, 1666 subjects
 - Participation rate: 94%
 - Sample retained for analysis: 1559 subjects
- Self-administered questionnaire measuring socioeconomic, health related, behavioral, and violence factors.
- Study approved by the regional education authority and the national review board.

Socioeconomic deprivations

- Family structure
 - Intact
 - Reconstructed
 - Parents divorced/separated
 - Single parent
 - Others
- Low parent-education (\leq high school diploma)
- Nationality
 - French
 - European immigrant
 - Non-European immigrant
- Father's occupation:
 - Manager & professional
 - Craftsman, tradesman, head of firm
 - Intermediate professional
 - Clerk
 - Manual worker
 - Other actives
 - Unemployed/inactive
- Family income:
 - Comfortable
 - Well off
 - Earning just enough
 - Coping but with difficulties
 - Getting into debt

Subjective health-related quality of life (QoL)

Was used WHOQoL measuring:

(Skevington et al., Qual Life Res 2004).

- Physical health (7 items)
- Psychological health (6 items)
- Social relationships (3 items)
- Living environment (8 items)

Score defined as the sum of items - range: 0 to 100 (best value)

Cutoff value used: <10th percentile value

(for psychological health this cutoff gives similar prevalence for depressive mood in France)

Unhealthy behaviours

Last-30-day substance consumption

(1 time or more vs. None)

- Tobacco
- Alcohol
- Cannabis
- Other illicit drugs

Potential mediators/moderators:

- Lack of regular sports/physical activities (last-year, at school & elsewhere)
- Victim of violence (lifetime),
- Victim of sexual abuse (lifetime),
- Involvement in violence (lifetime),
- Suicidal ideation (lifetime).

Statistical analysis

The data were analyzed using logistic models that yielded odds ratios adjusted for gender, age, and socioeconomic deprivations (OR1) for each of the following 8 outcome variables:

- Poor subjective health-related quality of life (physical health, psychological health, social relationships, and living environment),
- Last-30-day substance use (alcohol, tobacco, cannabis, and other illicit drugs).

To assess the mediating/moderating roles of low school performance, lack of physical/sports activities, obesity, victim of violence, victim of sexual abuse, involvement in violence, and suicide ideation, we computed the odds ratios with further adjustment for these covariates (OR2)

The contribution (%) of covariates was defined as the reduction in odds ratios computed with the following formula $(OR1 - OR2)/(OR1 - 1)$ (calculated for significant OR1 only).

Results

Table 1. Reliability of WHOQoL-Bref

	<i>Mean (SD)</i>	<i>Range</i>	<i>Minimum</i>	<i>Maximum</i>	<i>α r</i>
Physical health	76.3 (15.5) 0.81	0-100	0	5.2	0.72
Psychological health	62.8 (19.3) 0.82	0-100	0.2	1.3	0.70
Social relationships	78.0 (21.1) 0.78	0-100	1.0	29.1	0.62
Environment	75.4 (17.8) 0.83	0-100	0.3	9.2	0.78
Global score ^a	73.1 (14.9)	0-100	0	0.3	0.89

α : Cronbach α for each domain

r: Pearson correlation coefficient between each domain and the global score

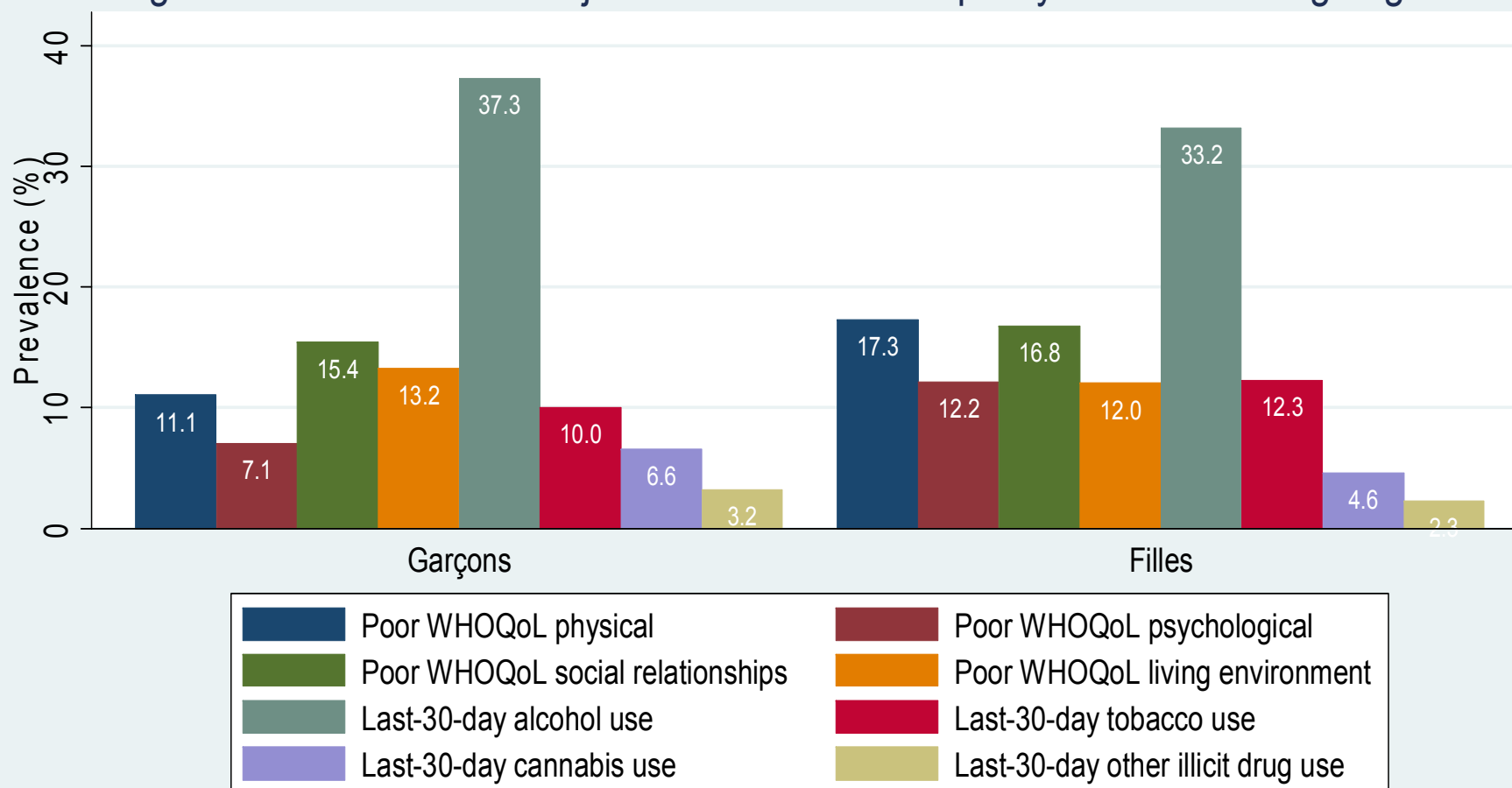
^a For all items of the 4 domains together.

Table 2. Characteristics of subjects: % or mean (SD)

Boys	49,9	Outcome variables	
Age (yr)	13 (1.3)	Poor health-related quality of life	
Family structure		Physical health	14
Intact	63	Psychological health	10
Reconstructed	15	Social relationships	16
Parents divorced or separated	10	Living environment	13
Single parent	7	Last-30-day substance use	
Others	5	Alcohol	35
Father's occupation		Tobacco	11
Managers and professionals	28	Cannabis	6
Craftsmen, tradesmen, firm heads	20	Other drugs	3
Intermediate professionals	10		
Service workers/clerks	9	Mediators/moderators	
Manual workers	18	Low school-performance (<10/20)	8
Other occupations	7	Lack of regular sports activity	12
Inactive people	7	Being obese	11
Parent education (≤high school diploma)	49	Being victim of violence	44
Insufficient income	5	Being victim of sexual abuse	4
Nationality		Involvement in violence	49
French	93	Suicidal ideation	12
European immigrant	4		
Non-European Immigrant	4		

Results

Figure 1. Prevalence of subjective health-related quality of life according to gender



The sex differences were significant for Poor WHOQoL physical and Poor WHOQoL psychological only ($p < 0.001$)

Table 3. Associations of poor physical and psychological health with socioeconomic deprivations: adjusted OR and 95% CI

	Poor physical health		Poor psychological health	
Boys	0.58***	0.43-0.80	0.54***	0.38-0.77
Age (yr)	1.21***	1.08-1.36	1.21**	1.06-1.38
Family structure				
Intact	1.00		1.00	
Reconstructed	1.98***	1.32-2.97	1.92**	1.20-3.05
Parents divorced or separated	1.85**	1.17-2.94	1.98**	1.18-3.32
Single parent	0.99	0.52-1.87	1.07	0.51-2.24
Others	2.44**	1.34-4.45	1.82	0.89-3.70
Father's occupation				
Managers and professionals	1.00		1.00	
Craftsmen, tradesmen, and firm heads	1.30	0.80-2.13	1.26	0.72-2.22
Intermediate professionals	0.80	0.41-1.55	1.41	0.73-2.73
Service workers/clerks	0.95	0.49-1.82	1.10	0.54-2.26
Manual workers	1.34	0.80-2.24	0.92	0.49-1.70
Other occupations	1.59	0.85-2.99	1.19	0.56-2.52
Inactive people	1.51	0.79-2.24	1.49	0.72-3.09
Parent education (\leq high school diploma)	1.59**	1.12-1.77	1.26	0.85-1.87
Insufficient income	1.50***	1.27-1.77	1.62***	1.35-1.96
Nationality				
French	1.00		1.00	
European immigrant	1.64	0.72-3.74	0.87	0.29-2.64
Non-European Immigrant	2.31*	1.10-4.84	0.96	0.36-2.57

*p<0.05, **p<0.01, *** p<0.001.

Table 4. Associations of poor social relationships and living environment with socioeconomic deprivations: adjusted OR and 95% CI

	Poor social relationships		Poor living environment	
Boys	0.91	0.69-1.21	1.13	0.81-1.58
Age (yr)	1.04	0.93-1.15	0.83**	0.74-0.95
Family structure				
Intact	1.00		1.00	
Reconstructed	1.13	0.75-1.70	1.80**	1.15-2.84
Parents divorced or separated	1.89**	1.24-2.87	3.25***	2.06-5.14
Single parent	0.96	0.53-1.75	1.88*	1.02-3.46
Others	1.52	0.84-2.74	2.13*	1.10-4.13
Father's occupation				
Managers and professionals	1.00		1.00	
Craftsmen, tradesmen, and firm heads	0.89	0.57-1.39	0.94	0.53-1.67
Intermediate professionals	0.83	0.47-1.46	0.80	0.38-1.67
Service workers/clerks	0.82	0.46-1.46	0.99	0.50-1.99
Manual workers	1.02	0.46-1.63	1.62	0.94-2.80
Other occupations	1.09	0.60-1.98	1.61	0.83-3.14
Inactive people	1.60	0.89-2.88	1.63	0.83-3.21
Parent education (≤high school diploma)	1.15	0.84-1.58	2.01***	1.37-2.93
Insufficient income	1.36***	1.35-1.96	1.71***	1.43-2.03
Nationality				
French	1.00		1.00	
European immigrant	0.98	0.40-2.42	1.41	0.57-3.50
Non-European Immigrant	4.58***	2.38-8.81	3.33***	1.59-6.97

*p<0.05, **p<0.01, *** p<0.001.

Table 5. Associations of last-30-day alcohol and tobacco uses with socioeconomic deprivations: adjusted OR and 95% CI

	Alcohol use		Tobacco use	
Boys	1.25*	1.00-1.55	0.81	0.58-1.14
Age (yr)	1.56***	1.43-1.70	1.48***	1.30-1.68
Family structure				
Intact	1.00		1.00	
Reconstructed	2.17***	1.59-2.96	3.28***	2.14-5.04
Parents divorced or separated	1.27	0.88-1.84	2.77***	1.69-4.53
Single parent	1.47	0.90-2.41	2.17*	1.13-4.18
Others	1.98**	1.22-3.22	2.41*	1.21-4.80
Father's occupation				
Managers and professionals	1.00		1.00	
Craftsmen, tradesmen, and firm heads	1.15	0.83-1.59	2.12**	0.83-1.59
Intermediate professionals	1.01	0.67-1.51	1.97*	1.06-3.69
Service workers/clerks	0.94	0.61-1.44	0.85	0.39-1.87
Manual workers	0.87	0.60-1.26	1.29	0.71-2.35
Other occupations	1.15	0.72-1.85	1.98	0.98-3.99
Inactive people	0.63	0.37-1.06	1.63	0.80-3.32
Parent education (≤high school diploma)	0.70**	0.54-0.89	0.81	0.56-1.18
Insufficient income	1.07	0.94-1.22	1.27**	1.05-1.53
Nationality				
French	1.00		1.00	
European immigrant	1.28	0.64-2.56	2.12	0.89-5.03
Non-European Immigrant	0.50	0.24-1.07	1.53	0.66-3.54

*p<0.05, **p<0.01, *** p<0.001.

Table 6. Associations of last-30-day cannabis and other illicit drug uses with socioeconomic deprivations: adjusted OR and 95% CI

	Cannabis		Other illicit drugs	
Boys	1.62*	1.02-2.58	1.48	0.78-2.81
Age (yr)	1.75***	1.46-2.11	1.35*	1.06-1.71
Family structure				
Intact	1.00		1.00	
Reconstructed	2.06*	1.09-3.90	2.09	0.89-4.91
Parents divorced or separated	2.49**	1.27-4.90	1.52	0.53-4.31
Single parent	3.06**	1.34-6.97	2.19	0.63-7.56
Others	3.35**	1.49-7.53	5.01***	1.92-13.06
Father's occupation				
Managers and professionals	1.00		1.00	
Craftsmen, tradesmen, and firm heads	1.21	0.65-2.28	1.22	0.49-2.99
Intermediate professionals	0.77	0.33-1.82	1.38	0.47-4.02
Service workers/clerks	0.25*	0.07-0.90	0.15	0.02-1.32
Manual workers	0.34*	0.14-0.81	0.49	0.16-1.57
Other occupations	0.74	0.29-1.91	0.52	0.12-2.31
Inactive people	0.66	0.26-1.66	0.51	0.13-2.00
Parent education (≤high school diploma)	0.97	0.58-1.62	1.22	0.60-2.50
Insufficient income	1.30**	1.02-1.66	1.59**	1.16-2.18
Nationality				
French	1.00		1.00	
European immigrant	3.61*	1.28-10.19	5.31**	1.66-16.99
Non-European Immigrant	1.78	0.63-5.03	2.41	0.67-8.71

*p<0.05, **p<0.01, *** p<0.001.

Table 7. Associations of poor physical and psychological health with socioeconomic deprivations:

OR1: OR adjusted for socioeconomic deprivations (as in previous Tables)

OR2: OR with further adjustment for low school performance, physical/sports activities, obesity, victim of violence, victim of sexual abuse, involvement in violence & suicide ideation

%: Mediating/moderating roles of these covariates.

	Physical health			Psychological health		
	OR1	OR2	%	OR1	OR2	%
Boys	0.58***	0.52***	14	0.54***	0.52**	4
Age (yr)	1.21***	1.20	5	1.21**	1.21**	0
Family structure						
Intact	1.00			1.00		
Reconstructed	1.98***	1.58*	41	1.92**	1.34	63
Parents divorced or separated	1.85**	1.34	60	1.98**	1.51	48
Single parent	0.99			1.07		
Others	2.44**	2.10*	24	1.82		
Father's occupation						
Managers and professionals	1.00			1.00		
Craftsmen, tradesmen, and firm heads	1.30			1.26		
Intermediate professionals	0.80			1.41		
Service workers/clerks	0.95			1.10		
Manual workers	1.34			0.92		
Other occupations	1.59			1.19		
Inactive people	1.51			1.49		
Parent education (≤high school diploma)	1.59**	1.53	10	1.26		
Insufficient income	1.50***	1.31**	38	1.62***	1.40**	35
Nationality						
French	1.00			1.00		
European immigrant	1.64			0.87		
Non-European Immigrant	2.31*	2.06	19	0.96		

Table 8. Associations of poor social relationships and living environment with socioeconomic deprivations:

OR1: OR adjusted for socioeconomic deprivations (as in previous Tables)

OR2: OR with further adjustment for low school performance, physical/sports activities, obesity, victim of violence, victim of sexual abuse, involvement in violence & suicide ideation

%: Mediating/moderating roles of these covariates.

	Social relationships			Living environment		
	OR1	OR2	%	OR1	OR2	%
Boys	0.91			1.13		
Age (yr)	1.04			0.83**	0.79***	24
Family structure						
Intact	1.00			1.00		
Reconstructed	1.13			1.80**	1.46	42
Parents divorced or separated	1.89**	1.66*	26	3.25***	2.64***	24
Single parent	0.96			1.88*	1.74	16
Others	1.52			2.13*	1.88	22
Father's occupation						
Managers and professionals	1.00			1.00		
Craftsmen, tradesmen, and firm heads	0.89			0.94		
Intermediate professionals	0.83			0.80		
Service workers/clerks	0.82			0.99		
Manual workers	1.02			1.62		
Other occupations	1.09			1.61		
Inactive people	1.60			1.63		
Parent education (≤high school diploma)	1.15			2.01***	1.95***	6
Insufficient income	1.36***	1.21*	42	1.71***	1.56***	21
Nationality						
French	1.00			1.00		
European immigrant	0.98			1.41		
Non-European Immigrant	4.58***	4.53***	1	3.33***	3.09**	10

Table 9. Associations of alcohol and tobacco uses with socioeconomic deprivations:

OR1: OR adjusted for socioeconomic deprivations (as in previous Tables)

OR2: OR with further adjustment for low school performance, physical/sports activities, obesity, victim of violence, victim of sexual abuse, involvement in violence & suicide ideation

%: Mediating/moderating roles of these covariates.

	Alcohol use			Tobacco use		
	OR1	OR2	%	OR1	OR2	%
Boys	1.25*	0.96	116	0.81		
Age (yr)	1.56***	1.52***	7	1.48***	1.44***	8
Family structure						
Intact	1.00			1.00		
Reconstructed	2.17***	1.82***	30	3.28***	2.68***	26
Parents divorced or separated	1.27			2.77***	1.89*	50
Single parent	1.47			2.17*	1.83	29
Others	1.98**	1.55	44	2.41*	1.41	71
Father's occupation						
Managers and professionals	1.00			1.00		
Craftsmen, tradesmen, and firm heads	1.15			2.12**	2.18**	-5
Intermediate professionals	1.01			1.97*	2.27*	-31
Service workers/clerks	0.94			0.85		
Manual workers	0.87			1.29		
Other occupations	1.15			1.98		
Inactive people	0.63	0.50*	35	1.63		
Parent education (\leqhigh school diploma)	0.70**	0.67**	10	0.81		
Insufficient income	1.07			1.27**	1.02	93
Nationality						
French	1.00			1.00		
European immigrant	1.28			2.12		
Non-European Immigrant	0.50	0.30**	40	1.53		