



**Supplementary Figure S1.** Workflow in this study. GDP, gross domestic product; SHSS, School Health Surveillance System.

**Supplementary Table S1.** Description of scales in this study

Scales	Response of scales	Range of scores	Items and interpretation
Adolescent Dissociative Experience Scale (A-DES)	From 'ever = 0' to 'always = 10'	0–10	It includes the experiences of dissociative amnesia (items 2, 5, 8, 12, 15, 22, 27), depersonalization/derealization (items 3, 6, 9, 11, 13, 17, 20, 21, 25, 26, 29, 30), absorption/imaginative involvement (items 1, 7, 10, 18, 24, 28), and passive influence (items 4, 14, 16, 19, 23). Higher scores indicate greater severity.
Chinese Adaptation Scale for Adolescents (CASA)	From 'not at all = 1' to 'fully = 4'	17–68	It includes emotional adaptation (6 items), social adaptation (6 items), and study and life adaptation (5 items). Higher scores indicate better social adjustment abilities.
Chinese version of Student-Teacher Relationship Scale (STRS-CV)	From 'not at all = 1' to 'entirely = 5'	28–140	A 28-item self-report instrument, which includes four domains: intimacy, conflict, support, and satisfaction. The three dimensions of intimacy, support and satisfaction reflect a positive teacher-student relationship, which higher scores indicate better teacher-student relationship. The dimension of conflict reflects a negative teacher-student relationship, in which higher scores indicate worse teacher-student relationship.
Chinese version of Peer Relationship Inventory (CPRI)	From 'not at all = 1' to 'fully = 5'	20–100	A 20-item self-report instrument, which measures three analytically derived dimensions of peer relations: social maturity, aggression, and independence. Higher scores indicate more positive peer relationship.
Chinese version of Family Environment Scale (FES-CV)	From 'no = 0' and 'yes = 1'	0–90	A 90-item self-report instrument, which includes three dimensions measured by 10 subscales that include relationship dimension [cohesion (score range, 0–9 points), expressiveness (score range, 0–9 points), and conflict (score range, 0–9 points) subscales], personal growth dimension [independence (score range, 0–9 points), achievement orientation (score range, 0–9 points), intellectual-cultural orientation (score range, 0–9 points), active-recreational orientation (score range, 0–9 points), and moral-religious emphasis (score range, 0–10 points) subscales], and system maintenance dimensions [organization (score range, 0–8 points) and control (score range, 0–9 points) subscales]. Higher scores indicate better family relationship in the subscales of cohesion, expressiveness, independence, achievement orientation, intellectual-cultural orientation, active-recreational orientation, moral-religious emphasis, and organization. Higher scores signify worse family relationship in the subscales of conflict and control.
Chinese version of Symptom Check List-90 (SCL-90-CV)	From 'not at all = 1' to 'extremely = 5'	90–450	A 90-item self-report instrument, which includes ten subscales (i.e., objective-comprehensive, somatic complaint, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, psychoticism, and diet/sleeping) that respond to an individual's specific aspect of the symptomatic situation. Higher scores suggest more serious psychological problems.

**Supplementary Table S2.** Univariate linear regression analysis for the association between different gender and adolescent dissociation symptoms in Hangzhou, China ( $N = 2,427$ )

Gender	Variables	Standardized regression coefficient	Standard error	t	P-value*	Standardized regression coefficient (95% confidence interval)
Males	Sociodemographic characteristics					
	Age groups (years)	0.026	0.132	0.913	0.361	-0.139 to 0.381
	Rural areas	-0.096	0.140	-3.404	0.001	-0.749 to -0.201
	Family economic status	0.027	0.090	0.969	0.333	-0.09 to 0.265
	Parents' marital status	0.022	0.117	0.762	0.446	-0.14 to 0.318
	Academic achievement	-0.019	0.066	-0.655	0.513	-0.173 to 0.086
	Left-behind adolescents	-0.104	0.190	-3.704	< 0.001	-1.074 to -0.33
	Normalized body size	-0.011	0.071	-0.403	0.687	-0.169 to 0.111
	Single child	0.044	0.132	1.570	0.117	-0.052 to 0.467
	Boys' sperma to rrhea	-0.060	0.135	-2.134	0.033	-0.553 to -0.023
	Outpatient psychiatric visit in one year	-0.131	0.251	-4.655	< 0.001	-1.661 to -0.676
	Social environmental factors					
	Social adjustment status					
	Emotional adaptation	-0.207	0.018	-7.468	< 0.001	-0.170 to -0.099
	Social adaptation	-0.187	0.017	-6.737	< 0.001	-0.151 to -0.083
	Study and life adaptation	-0.146	0.019	-5.224	< 0.001	-0.135 to -0.061
	School environment factors					
	Teacher-student relationship					
	Positive	-0.029	0.008	-1.033	0.302	-0.023 to 0.007
	Conflict	0.208	0.017	7.507	< 0.001	0.095 to 0.163
	Peer relationship					
	Social emotion	-0.071	0.014	-2.529	0.012	-0.063 to -0.008
	Interpersonal interaction	-0.116	0.015	-4.132	< 0.001	-0.094 to -0.033
	Interpersonal harmony	-0.116	0.011	-4.130	< 0.001	-0.070 to -0.025
	Family environment factors					
	Expressiveness	-0.135	0.043	-4.819	< 0.001	-0.294 to -0.124
	Conflict	0.226	0.033	8.208	< 0.001	0.205 to 0.334
	Independence	-0.028	0.043	-0.995	0.320	-0.128 to 0.042
	Achievement orientation	-0.011	0.042	-0.376	0.707	-0.098 to 0.067
	Intellectual-cultural orientation	-0.081	0.033	-2.866	0.004	-0.158 to -0.03
	Active-recreational orientation	-0.147	0.033	-5.254	< 0.001	-0.238 to -0.109
	Control	0.046	0.035	1.644	0.100	-0.011 to 0.126
	Moral-religious emphasis	-0.114	0.044	-4.058	< 0.001	-0.267 to -0.093
	Organization	-0.199	0.042	-7.188	< 0.001	-0.388 to -0.221
	Cohesion	-0.189	0.038	-6.794	< 0.001	-0.332 to -0.183
	Psychological factors					
	Symptom Check List-90 scores					
	Obsessive-compulsive	0.367	0.008	13.931	< 0.001	0.098 to 0.131
	Somatic complaints	0.381	0.009	14.565	< 0.001	0.111 to 0.146
	Interpersonal sensitivity	0.38	0.009	14.495	< 0.001	0.117 to 0.154
Depression	0.402	0.007	15.487	< 0.001	0.089 to 0.115	
Anxiety	0.418	0.009	16.25	< 0.001	0.129 to 0.165	
Hostility	0.388	0.014	14.887	< 0.001	0.183 to 0.238	
Phobic anxiety	0.375	0.013	14.283	< 0.001	0.163 to 0.215	
Paranoid ideation	0.405	0.015	15.642	< 0.001	0.203 to 0.261	
Psychoticism	0.387	0.01	14.834	< 0.001	0.129 to 0.169	
Diet/sleeping	0.41	0.013	15.875	< 0.001	0.178 to 0.228	

Continued

Gender	Variables	Standardized regression coefficient	Standard error	t	P-value *	Standardized regression coefficient (95% confidence interval)
Females	Sociodemographic characteristics					
	Age groups (years)	0.014	0.111	0.497	0.619	-0.163 to 0.274
	Rural areas	-0.038	0.124	-1.288	0.198	-0.402 to 0.083
	Family economic status	0.053	0.094	1.815	0.07	-0.014 to 0.353
	Parents' marital status	0.007	0.086	0.248	0.804	-0.147 to 0.189
	Academic achievement	-0.19	0.061	-6.622	< 0.001	-0.525 to -0.285
	Left-behind adolescents	-0.085	0.144	-2.918	0.004	-0.701 to -0.137
	Normalized body size	0.087	0.062	2.985	0.003	0.063 to 0.307
	Single child	-0.014	0.119	-0.492	0.623	-0.293 to 0.175
	Girls' menstruation	0.071	0.189	2.434	0.015	0.089 to 0.831
	Outpatient psychiatric visit in one year	-0.176	0.178	-6.132	< 0.001	-1.438 to -0.741
	Social environmental factors					
	Social adjustment status					
	Emotional adaptation	-0.276	0.016	-9.858	< 0.001	-0.191 to -0.128
	Social adaptation	-0.331	0.016	-12.012	< 0.001	-0.226 to -0.162
	Study and life adaptation	-0.302	0.016	-10.86	< 0.001	-0.21 to -0.146
	School environment factors					
	Teacher-student relationship					
	Positive	-0.112	0.007	-3.859	< 0.001	-0.043 to -0.014
	Conflict	0.145	0.017	5.027	< 0.001	0.053 to 0.12
	Peer relationship					
	Social emotion	-0.114	0.014	-3.93	< 0.001	-0.084 to -0.028
	Interpersonal interaction	-0.22	0.015	-7.743	< 0.001	-0.144 to -0.086
	Interpersonal harmony	-0.256	0.01	-9.09	< 0.001	-0.111 to -0.072
	Family environment factors					
	Expressiveness	-0.224	0.033	-7.884	< 0.001	-0.324 to -0.195
	Conflict	0.308	0.025	11.096	< 0.001	0.229 to 0.327
	Independence	-0.028	0.038	-0.947	0.344	-0.112 to 0.039
	Achievement orientation	0.044	0.033	1.502	0.133	-0.015 to 0.114
	Intellectual-cultural orientation	-0.136	0.027	-4.723	< 0.001	-0.177 to -0.073
	Active-recreational orientation	-0.108	0.024	-3.731	< 0.001	-0.138 to -0.043
	Control	-0.015	0.029	-0.529	0.597	-0.072 to 0.041
	Moral-religious emphasis	-0.056	0.036	-1.935	0.053	-0.141 to 0.001
	Organization	-0.273	0.033	-9.715	< 0.001	-0.389 to -0.258
	Cohesion	-0.261	0.026	-9.272	< 0.001	-0.292 to -0.19
	Psychological factors					
	Symptom Check List-90 scores					
	Obsessive-compulsive	0.581	0.006	24.477	< 0.001	0.133 to 0.156
	Somatic complaints	0.564	0.006	23.425	< 0.001	0.122 to 0.145
	Interpersonal sensitivity	0.571	0.006	23.849	< 0.001	0.141 to 0.167
Depression	0.609	0.004	26.309	< 0.001	0.101 to 0.118	
Anxiety	0.607	0.006	26.191	< 0.001	0.143 to 0.166	
Hostility	0.593	0.009	25.281	< 0.001	0.214 to 0.25	
Phobic anxiety	0.524	0.009	21.116	< 0.001	0.172 to 0.207	
Paranoid ideation	0.611	0.01	26.456	< 0.001	0.244 to 0.283	
Psychoticism	0.622	0.006	27.227	< 0.001	0.161 to 0.186	
Diet/sleeping	0.584	0.009	24.695	< 0.001	0.204 to 0.239	

**Note.** \* Data in bold are statistically significant ( $P < 0.05$ ).

**Supplementary Table S3.** Stepwise multiple linear regression analysis for the association between different gender and adolescent dissociation symptoms in Hangzhou, China (*N* = 2,427)

Gender	Variables	Standardized regression coefficient	Standard error	<i>t</i>	<i>P</i> -value*	Standardized regression coefficient (95% confidence interval)
Males	Psychological factors					
	Anxiety	0.171	0.019	3.144	0.002	0.023 to 0.098
	Diet/sleeping	0.142	0.024	2.933	0.003	0.023 to 0.117
	Paranoid ideation	0.107	0.029	2.119	0.034	0.033 to 0.112
	Family environmental factors					
	Family conflict	0.104	0.032	3.875	< 0.001	0.061 to 0.186
	Family expressiveness	-0.058	0.04	-2.246	0.025	-0.169 to -0.011
	Sociodemographic characteristics					
Rural areas	-0.05	0.126	-1.966	0.049	-0.497 to -0.001	
Females	Psychological factors					
	Psychoticism	0.168	0.014	3.28	0.001	0.019 to 0.075
	Paranoid ideation	0.168	0.02	3.564	< 0.001	0.033 to 0.112
	Somatic complaints	0.115	0.009	3.077	0.002	0.01 to 0.045
	Obsessive-compulsive	0.109	0.01	2.715	0.007	0.008 to 0.047
	Hostility	0.125	0.017	2.892	0.004	0.016 to 0.082
	Family environmental factors					
	Family organization	-0.051	0.028	-2.151	0.032	-0.115 to -0.005
	School environmental factors					
	Peer interpersonal interaction relationship	-0.071	0.012	-3.129	0.002	-0.06 to -0.014

**Supplementary Table S4.** Model fit indices for structural equation models of adolescent dissociative symptoms in males and females

SEM model	Chi-square (CMIN)	Cardinality of freedom ratio (CMIN/DF)	<i>P</i> value	CFI	GFI	RMSEA	90% confidence interval		AIC	BIC
							Lower bound	Upper bound		
Males	24.472	2.447	0.006	0.996	0.994	0.034	0.017	0.051	60.472	152.814
Females	85.961	5.373	< 0.001	0.989	0.982	0.061	0.049	0.074	125.961	227.393

**Note.** SEM, structural equation model; CFI, comparative fit index (CFI ≥ 0.90 is acceptable ≥ 0.95 is good); GFI, goodness-of-fit index (GFI ≥ 0.90 is acceptable ≥ 0.95 is good ); RMSEA, root mean square error of approximation (RMSEA ≤ 0.08 recommended); AIC, Akaike’s information criterion; BIC, Bayes information criterion (lower values indicate a better fit therefore the model with the lowest AIC and BIC is the best fitting model).

**Supplementary Table S5.** Path coefficients of structural equation models for the impact factors of ADSs

Gender	Paths	Estimates ( $\beta$ )	SE	Z-value	P-value	Standardized estimates ( $\beta$ )
Males	Psychological factors→Dissociative symptoms	0.207	0.021	9.788	< 0.001	0.369
	Psychological factors→Anxiety	1.497	0.030	50.139	< 0.001	0.939
	Psychological factors→Diet/sleeping	1.000	NA	NA	NA	0.884
	Psychological factors→Paranoid ideation	0.885	0.019	46.899	< 0.001	0.903
	Family environmental factors→Dissociative symptoms	0.299	0.121	2.472	0.013	0.169
	Family environmental factors→Family expressiveness	-0.358	0.079	-4.519	< 0.001	-0.311
	Family environmental factors→Family conflict	1.000	NA	NA	NA	0.670
	Family expressiveness→Dissociative symptoms	-0.049	0.047	-1.040	0.298	-0.032
	Rural area→Diet/sleeping	-0.621	0.148	-4.192	< 0.001	-0.062
	Rural area→Dissociative symptoms	0.289	0.125	2.313	0.021	0.058
	Family environmental factors Psychological factors	2.349	0.250	9.396	< 0.001	0.429
Females	Psychological factors→Psychoticism	1.000	NA	NA	NA	0.928
	Psychological factors→Paranoid ideation	0.632	0.012	53.284	< 0.001	0.908
	Psychological factors→Somatic complaints	1.047	0.025	41.620	< 0.001	0.825
	Psychological factors→Obsessive-compulsive	1.035	0.023	45.681	< 0.001	0.858
	Psychological factors→Hostility	0.678	0.014	49.352	< 0.001	0.884
	Psychological factors→Dissociative symptoms	0.178	0.014	12.357	< 0.001	0.592
	Family and school environmental factors→Peer interpersonal interaction relationship	1.484	0.217	6.825	< 0.001	0.358
	Family and school environmental factors→Family organization	1.000	NA	NA	NA	0.549
	Family and school environmental factors→Dissociative symptoms	-0.241	0.157	-1.531	0.126	-0.111
	Peer interpersonal interaction relationship→Psychoticism	-0.043	0.025	-1.741	0.082	-0.023
	Peer interpersonal interaction relationship→Dissociative symptoms	-0.026	0.015	-1.757	0.079	-0.049
	Family and school environmental factors Psychological factors	-3.474	0.323	-10.763	< 0.001	-0.621

**Note.** ADSs, adolescent dissociative symptoms; SE, standard error; NA, not available.