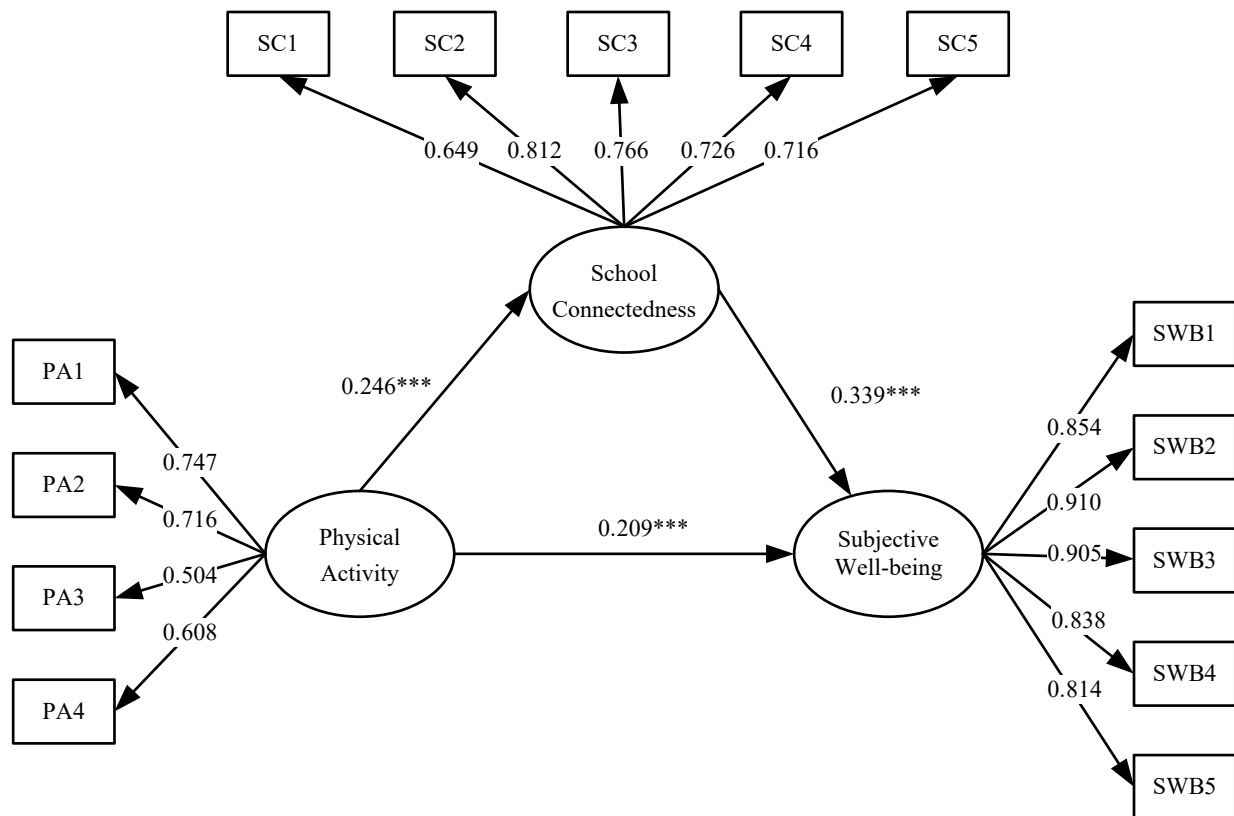


## Appendix 1



**Appendix Fig. 1** Standardized SEM coefficients ( $N=3143$ ) for the association between physical activity and subjective well-being among adolescents in southwest China: the mediating role of school connectedness.

**Notes:** PA1-PA4 represent the 4 items of the physical activity scale, SC1-SC5 represent the 5 items of the school connectedness scale, and SWB1-SWB5 represent the 5 items of the WHO-5 scale. And the pathways from the control variables (i.e., gender, age, and ethnicity) to subjective well-being are omitted. \*\*\* $P<0.001$  (two-tailed).

**Appendix Table 1** Multicollinearity test

Variable	Unstandardized coefficient		Standardized coefficient	<i>t</i>	<i>P</i>	Co-linear statistics	
	<i>B</i>	<i>SE</i>	$\beta$			Tolerance	VIF
<b>Age</b>	-0.010	0.009	-0.023	-1.197	0.232	0.877	1.141
<b>Gender</b>	-0.009	0.027	-0.006	-0.320	0.749	0.976	1.024
<b>Ethnicity</b>	-0.134	0.020	-0.124	-6.781	0.000	0.938	1.066
<b>Physical activity</b>	0.028	0.006	0.090	4.740	0.000	0.868	1.152
<b>School connectedness</b>	-0.005	0.004	-0.026	-1.313	0.189	0.788	1.270
<b>Subjective well-being</b>	0.001	0.002	0.005	0.239	0.811	0.644	1.553
<b>Resilience</b>	-0.002	0.001	-0.050	-2.342	0.019	0.694	1.442

**Notes:** Dependent variable is parental absence.

**Appendix Table 2** Path coefficients of the mediation model

<b>Path</b>	<b>Unstandardized coefficient</b>	<b>Standardized coefficient</b>	<b>SE</b>	<b><i>t</i></b>	<b><i>P</i></b>
<b>Physical activity → School connectedness</b>	0.428	0.246	0.040	10.634	<0.001
<b>School connectedness → Subjective well-being</b>	0.696	0.339	0.042	16.753	<0.001
<b>Physical activity → Subjective well-being</b>	0.744	0.209	0.073	10.174	<0.001
<b>Gender → Subjective well-being</b>	-0.119	-0.044	0.045	-2.663	0.008
<b>Age → Subjective well-being</b>	-0.132	-0.163	0.013	-9.864	<0.001
<b>Ethnicity → Subjective well-being</b>	0.280	0.145	0.032	8.779	<0.001

**Appendix Table 3a** Multi-group comparison of adaptation

<b>Model</b>	<b>CMIN</b>	<b>DF</b>	<b>P</b>	<b>CMIN/DF</b>
<b>Unconstrained</b>	2052.108	660	<0.001	3.109
<b>Measurement weights</b>	2082.752	690	<0.001	3.018
<b>Structural weights</b>	2118.726	710	<0.001	2.984
<b>Structural covariances</b>	2435.191	728	<0.001	3.345
<b>Structural residuals</b>	2449.502	732	<0.001	3.346
<b>Measurement residuals</b>	2552.015	772	<0.001	3.306

**Appendix Table 3b** Multi-group comparison of adaptation

<b>Model</b>	<b>NFI</b>	<b>RFI</b>	<b>IFI</b>	<b>TLI</b>	<b>CFI</b>	<b>GFI</b>	<b>AGFI</b>	<b>PGFI</b>	<b>RMSEA</b>	<b>AIC</b>	<b>ECVI</b>
<b>Unconstrained</b>	0.945	0.937	0.962	0.956	0.962	0.946	0.932	0.754	0.026	2388.108	0.761
<b>Measurement weights</b>	0.944	0.939	0.962	0.958	0.962	0.945	0.934	0.788	0.025	2358.752	0.751
<b>Structural weights</b>	0.943	0.939	0.962	0.959	0.962	0.944	0.935	0.810	0.025	2354.726	0.750
<b>Structural covariances</b>	0.935	0.932	0.953	0.951	0.953	0.938	0.929	0.824	0.027	2635.191	0.839
<b>Structural residuals</b>	0.934	0.932	0.953	0.951	0.953	0.937	0.929	0.829	0.027	2641.502	0.841
<b>Measurement residuals</b>	0.932	0.933	0.951	0.952	0.951	0.935	0.931	0.872	0.027	2664.015	0.848

**Appendix Table 4** Invariance test

<b>Model</b>	<b>delta-CMIN</b>	<b>delta-DF</b>	<b><i>P</i></b>	<b>delta-NFI</b>	<b>delta-RFI</b>	<b>delta-IFI</b>	<b>delta-TLI</b>	<b>delta-CFI</b>	<b>delta-GFI</b>	<b>delta-AGFI</b>	<b>delta-PGFI</b>
<b>Measurement weights</b>	30.644	30	0.433	-0.001	0.002	0.000	0.002	0.000	-0.001	0.002	0.034
<b>Structural weights</b>	35.974	20	0.015	-0.001	0.000	0.000	0.001	0.000	-0.001	0.001	0.022
<b>Structural covariances</b>	316.465	18	<0.001	-0.008	-0.007	-0.009	-0.008	-0.009	-0.006	-0.006	0.014
<b>Structural residuals</b>	14.311	4	0.006	-0.001	0.000	0.000	0.000	0.000	-0.001	0.000	0.005
<b>Measurement residuals</b>	102.513	40	<0.001	-0.002	0.001	-0.002	0.001	-0.002	-0.002	0.002	0.043