**Table S1.***Zero-order correlations for income, harsh parenting, and school violence across timepoints*

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| 1. T1 Income
 | — |  |  |  |  |  |  |  |  |
| 1. T2 Income
 | .82\*\*\* | — |  |  |  |  |  |  |  |
| 1. T3 Income
 | .73\*\*\* | .81\*\*\* | — |  |  |  |  |  |  |
| 1. T1 Harsh parenting
 | -.05 | -.03 | -.04 | — |  |  |  |  |  |
| 1. T2 Harsh parenting
 | -.03 | -.01 | .00 | .57\*\*\* | — |  |  |  |  |
| 1. T3 Harsh parenting
 | -.01 | .02 | .01 | .51\*\*\* | .61\*\*\* | — |  |  |  |
| 1. T1 School violence
 | -.10\*\*\* | -.07\* | -.11\*\*\* | .08\*\* | .10\*\*\* | .05 | — |  |  |
| 1. T2 School violence
 | -.13\*\*\* | -.12\*\*\* | -.13\*\*\* | .08\*\* | .07\* | .02 | .25\*\*\* | — |  |
| 1. T3 School violence
 | -.11\*\*\* | -.13\*\*\* | -.12\*\*\* | .04 | .04 | -.02 | .21\*\*\* | .30\*\*\* | — |
| *Note.* Spearman correlations reported, pairwise deletion (*n*s = 990 to 1383). T1 = age 13, T2 = age 15, T3 = age 17.\**p* < .05, \*\**p* < .01, \*\*\**p* < .001.Data were compiled from the final master file of the Québec Longitudinal Study of Child Development (1998–2018), ©Gouvernement du Québec, Institut de la statistique du Québec. |

**Figure S1.** *Johnson Neyman intervals for polygenic-environment interactions in late adolescence*

****

*Note.* Antisocial behavior polygenic risk scores (ASB-PRS) are standardized (mean = 0, one standard deviation (SD) from mean = +1/-1). Exact regions of significance were confirmed using simple slope tests to the closest 0.1 SD value. Significant negative relations between harsh parenting and dynamic social aggression occurred within late adolescents with an ASB-PRSc or ASB-PRSa lower than -0.3 or -0.7 SDs below the mean (*B* = -0.08, *SE* = 0.04, *p* = .042; *B* = -0.09, *SE* = 0.04, *p* = .037, respectively). Significant positive relations between harsh parenting and dynamic social aggression occurred within late adolescents with an ASB-PRSc or ASB-PRSa higher than 2.1 or 1.5 SDs above the mean (*B* = 0.14, *SE* = 0.07, *p* = .049; *B* = 0.10, *SE* = 0.05, *p* = .043, respectively). The ASB-PRSc and ASB-PRSa were derived from the Pappa et al. (2016; child sample GWAS) and Tielbeek et al. (2022; adult sample GWAS), respectively.

**Appendix S1.**

**Genotype quality control**

SNPs with a minor allele frequency (MAF) less than 1% were excluded, along with SNPs and participants with missing data higher than 2%. After this initial step, 294156 variants remained and 951 participant samples. We also excluded participants whose self-reported sex did not match the genetic information available using X chromosome heterozygosity or homozygosity rates, along with participants who were found to be genetic duplicates. To maintain the independence of the data, we also excluded cases expected to be relatives (proportion of identity-by-descent alleles value [PI-HAT] ≥ .125, corresponding to first-degree cousins). Population genetic stratification was modeled using 10 multidimensional scaling (MDS) components. For calculation of MDS components, SNPs that did not met the criteria for Hardy-Weinberg equilibrium (HWE) at *p* < 10-3 and SNPs with MAF less than 5% were excluded. Remaining SNPs were pruned according to a region of 200 variants, a step size of 100, and a correlation between a pair of loci (*r*2)inferior to .20. Participants with outlier values (multiple threshold were used iteratively: 10, 6 & 4) in each component were iteratively excluded to address the potential bias due to genetic differences in the population. Following the population genetic stratification analysis, the participants’ autosomal heterozygosity rates were determined and samples with high heterozygosity rates (>4 SD) were excluded. Similarly, outliers with high X-chromosomal heterozygosity were removed. Non-autosomes in deviations from Hardy-Weinberg equilibrium (*p* < 1\*10-6) were excluded. Finally, we excluded SNPs in deviation from HWE (*p* < 1\*10-6). These steps were performed in PLINK v1.90b6.7 (QLSCD)

**Imputation**

Before imputation, we removed from our sample ambiguous SNPs with respect to their strand orientation. The SNPs identification values were then updated as they may have change in the databases used later to create haplotypes. One copy of each duplicated SNPs was then removed. Strands of SNPs were checked relative to the reference panel and flipped if a mismatch was found. SNPs that could not be flipped were removed. SNPs were then imputed using IMPUTE2 (Howie, Donnelly, & Marchini, 2009) in 5 megabasepair chunks with 500 kilobase buffers, using all reference data. After imputation, only variants with a MAF ≥ 1% and an INFO metric ≥ .8 were retained. SNPs that were in deviations from Hardy-Weinberg equilibrium (*p* < 1\*10-6) were once again excluded. After the initial QC and imputation, our sample have 8 407 807 SNPs on 782 participants.

**Data availability**

Genome-wide association studies’ summary statistics used to calculate polygenic scores were based on (Pappa et al., 2016) and downloaded from the Netherland Twin register web site at:

<https://tweelingenregister.vu.nl/eagle-gwa-meta-analyses-summary-results>

**Appendix S2.**

|  |
| --- |
| **Nonaggressive Antisocial Behavior Scales** |
| *Age 13 years* | *Age 15 & 17 years* |
| I tell lies or cheat | I cheated in order to succeed at school |
|  | I told lies in order to get things or favours from others |
|  | I cheated in order to make some money |
|  | I told lies in order to get out of doing things I was supposed to do |
|  | I cheated in order to win a competition |
| I steal outside my home | I stole money or objects from school or from stores |
|  | I entered a house, a building or a car without permission in order to steal |
| I steal at home | I stole money or objects from home |
|  | I stayed out all night without my parents' permission |
|  | I skipped school without reason (cut class) |
|  | I stayed out at night much later than I was allowed to |
| I destroy my own things | I ran away from home |
| I destroy things belonging to my family or other young people | I deliberately destroyed someone else's property |
| I vandalize | I deliberately started a fire |

|  |
| --- |
| **Physical Aggression Scales** |
| *13 years* | *15 & 17 years* |
| I physically attack people | I participated in gang fights |
| I kick or hit other people | I deliberately hurt someone to the point that they had to receive medical care |
| I get into many fights | I hit people with the intent to make them suffer |
|  | I used a weapon (i.e. stick, rock, knife) during a fight |
|  | I got into a fight intending to seriously hurt someone |
|  | I beat up someone who hadn't done anything to me |
| When another young person accidentally hurts me, I assume that they meant to do it, and I react with anger and fighting | I hit someone who hurt me, even though that person didn't hurt me on purpose |
| I react in aggressive manner when teased (for example, hit, push or slap another child) | I hit someone who was threatening me |
| I react in an aggressive manner when contradicted (for example, hit, push or slap another child) | I hit someone who pushed me, even though that person didn't push me on purpose |
| I react in an aggressive manner when something is taken away from me (for example, hit, push or slap another child) |  |
| I threaten to hit people | I threatened to fight someone to force him to do something that he did not want to do |
|  | I threatened to hit someone in order to steal from them |
|  | I threatened to hit someone to get what I wanted |

|  |
| --- |
| **Social Aggression Scales** |
| *Age 13 years* | *Age 15 & 17 years* |
| When I am mad at someone, I say bad things behind his/her back | I said hurtful things behind someone's back |
| When I am mad at someone, I try to get others to dislike him/her | I cyberbullied another young person (insults, threats, bullying, etc.) on the Internet or using a cell phone |
| When I am mad at someone, I become friends with another as revenge | I called other people names, insulted them or said hurtful things to them |
| When I am mad at someone, I say to others: «let's not be with him/her» | I made fun of or laughed at someone |
|  | I stopped someone from joining my group when they wanted to |

**Appendix S3. Revised Scales**

To optimize likeness between antisocial scales used at age 13 and 15/17, revised scales were created. First, items tapping into similar behaviors were selected and weighted equivalently in scales. Next, new adapted scales were assessed for scale item reliability using Cronbach’s alpha (if scale ≥ 10 items) or mean inter-item correlations (if scale < 10 items) and for whether they load adequately onto the same antisocial construct via principal component factor analyses (≥ 0.4 as a guideline; Yong & Pearce, 2013). When items were collapsed together (in order to assign them the same weight between scales), correlation matrixes between items and subscales were used to ensure collapsing items optimized correlations between age 13 and 15 equivalent items (see revised scale details in tables below). However, correlations between antisocial behavior at age 13 and 15 differed minimally between original or revised versions: physical aggression *r* = .32 vs. .32; social aggression *r* = .34 vs. .33; nonaggressive conduct problems *r* = .51 vs. .49, respectively. Antisocial behavior correlations between age 15 and 17 were slightly higher when original scales were used versus revised scales: physical aggression *r* = .52 vs. .51; social aggression *r* = .53 vs. .49; nonaggressive conduct problems *r* = .56 vs. .46, respectively. Thus, original scales were retained for main analyses.

|  |
| --- |
| **Revised Nonaggressive Antisocial Behavior Scales** |
| *Age 13 years* | *Age 15 & 17 years* | *r (13 vs 15, 15 vs 17)* |
| I tell lies or cheata | I cheated in order to succeed at school | .28, 42 |
|  | I told lies in order to get things or favours from others |  |
|  | I cheated in order to make some money |  |
|  | I told lies in order to get out of doing things I was supposed to do |  |
|  | I cheated in order to win a competition |  |
| I steal outside my homeb | I stole money or objects from school or from stores | .41, .36 |
| I destroy things belonging to my family or other young peoplec | I deliberately destroyed someone else's property | .23, .32 |
| I vandalize |  |  |
| Scale inter-item r = .30 | Scale inter-item r = .41, .33 | Full scale = .49, .46 |

**Note.** When all nonaggressive items and computed subscales from age 13, 15, and 17 were included in a reliability analysis, no individual item reduced scale reliability; Cronbach’s α = .74. When entered into a principal component factor analysis, two factors are identified: (1) a general nonaggressive conduct problem factor, loading range .43 to .76 and (2) an age 17 nonaggressive conduct problem factor, loading range .57 to -.45.

a Cheating-lying items: When all cheating-lying items were included in a reliability analysis, no individual item reduced scale reliability more than .002; Cronbach’s α = .72. The age 13 item correlated most strongly with the computed scale for age 15, i.e., single items for cheating/lying at 15 did not correlate as highly with age 13 item as the computed scales did, indicating combining construct-relevant items improved reliability. A factor analysis including all age 13 and 15 items loaded onto a single factor (loading range = .48–.71).

b Stealing outside the home: When all stealing outside the home items were included in a reliability analysis, no individual item reduced scale reliability more than .002; mean inter-item *r* = .33. A factor analysis including items at all ages loaded onto a single factor (loading range = .66–.82).

c Damaging others’ property: When all damaging others’ property items were included in a reliability analysis, no individual item reduced scale reliability; mean inter-item *r* = .18. A factor analysis including items at ages 13 and 15 loaded onto two factors: (1) a general property damage factor, loading range = .51 to .68, and (2) age 15 property damage factor, loading range = .68 to -.51.

|  |
| --- |
| **Adapted Physical Aggression Scale Itemsa**  |
| *13 years* | *15 & 17 years* | *r (13 vs 15, 15 vs 17)* |
| I physically attack peoplea | I participated in gang fights | .24, .44 |
| I kick or hit other people | I deliberately hurt someone to the point that they had to receive medical care |  |
| I get into many fights | I hit people with the intent to make them suffer |  |
|  | I got into a fight intending to seriously hurt someone |  |
|  | I beat up someone who hadn't done anything to me |  |
| When another young person accidentally hurts me, I assume that they meant to do it, and I react with anger and fightingb | I hit someone who hurt me, even though that person didn't hurt me on purpose | .18, .32 |
| I hit someone who pushed me, even though that person didn't push me on purpose |  |
| I threaten to hit peoplec | I threatened to fight someone to force him to do something that he did not want to do | .17, .36 |
|  | I threatened to hit someone in order to steal from them |  |
|  | I threatened to hit someone to get what I wanted |  |
| Scale inter-item r = .42 | Scale inter-item r = .51, .52 | Full scale = .32, .51 |

**Note.** When all physical aggression items and computed subscales from age 13, 15, and 17 were included in a reliability analysis, no individual item reduced scale reliability more than .002; Cronbach’s α = .78. When entered into a principal component factor analysis, three factors were identified: (1) a general physical aggression factor, loading range .39 to .73, (2) an age 13 physical aggression factor, loading range .64 to -.38, and (3) an age 17 physical aggression factor, loading range .53 to -.47.

aViolence: When all violence items were included in a reliability analysis, no individual item reduced scale reliability more than .002; Cronbach’s α = .81. The computed scale for age 13 correlated most strongly with the computed scale for age 15, i.e., single items for violence between 13 and 15 did not correlate as highly as the computed scales did, indicating combining construct-relevant items improved reliability. A factor analysis including all age 13 and 15 items indicated all items loaded onto two factors: (1) a general violence factor, loading range = .45 to .72, and (2) an age 13 violence factor loading range = .67 to -.40.

bReactive aggression: When all reactive items were included in a reliability analysis, the age 13 individual item reduced scale reliability by .02; mean inter-item *r* = .23. The age 13 item correlated equally (.005 *r* difference) or more strongly with the computed 2-item scale for age 15, when compared to correlations with age 15 single items. A factor analysis including all age 13 and 15 items loaded onto a single factor (loading range = .48–.80).

cThreat: When all threat items were included in a reliability analysis, the age 13 individual item reduced scale reliability by .02; mean inter-item *r* = .19. The age 13 item correlated similarly (.02 *r* difference) or more strongly with the computed 3-item scale for age 15, when compared to correlations with age 15 single items. A factor analysis including all age 13 and 15 items loaded onto a single factor (loading range = .36–.82), the lowest loading item was the age-13 item. However, when a factor analysis was done including the age 13 item and the age 15 and 17 computed threat scales, the age 13 loading improved (loadings range = .54–.77).

|  |
| --- |
| **Trimmed Social Aggression Scales** |
| *Age 13 years* | *Age 15 & 17 years* | *Item rs (13 vs 15, 15 vs 17)* |
| When I am mad at someone, I say bad things behind his/her backa | I said hurtful things behind someone's back | .30, .40 |
| When I am mad at someone, I try to get others to dislike him/herb | I called other people names, insulted them or said hurtful things to them | .22, .48 |
|  | I made fun of or laughed at someone |  |
|  | I cyberbullied another young person (insults, threats, bullying, etc.) on the Internet or using a cell phone |  |
| When I am mad at someone, I say to others: «let's not be with him/her» | I stopped someone from joining my group when they wanted to | .15, .29 |
| Scale inter-item r = .40 | Scale inter-item r = .36, .33 | Full scale = .33, .49 |

**Note.** When all social aggression items and computed subscales from age 13, 15, and 17 were included in a reliability analysis, no individual item reduced scale reliability; Cronbach’s α = .74. When entered into a principal component factor analysis, two factors were identified: (1) a general social aggression factor, loading range .39 to .73, (2) an age 13 physical aggression factor, loading range .64 to -.38, and (3) an age 17 physical aggression factor, loading range .53 to -.47.

aTalking behind back: When all talking behind back items were included in a reliability analysis, no individual item reduced scale reliability; mean inter-item *r* = .32. A factor analysis including items at all ages loaded onto a single factor (loading range = .68–.79).

bSocial bullying: When all social bullying items were included in a reliability analysis, the age 13 individual item reduced scale reliability by .001; mean inter-item *r* = .24. The age 13 item correlated equally (.006 *r* difference) or more strongly with the computed 3-item scale for age 15, when compared to correlations with age 15 single items. A factor analysis including all age 13 and 15 items loaded onto a single factor (loading range = .52–.76).

cExclusion: When all exclusion items were included in a reliability analysis, the age 13 individual item reduced scale reliability by .06; mean inter-item *r* = .16. A factor analysis including all age items loaded onto a single factor (loading range = .46–.77).

**Appendix S4.** Mplus syntax for model 1, a three-factor model of stable antisociality across adolescence (i.e., physical aggression, social aggression, and nonaggressive conduct problems) regressed on school violence, harsh parenting, and PRS for antisociality.

TITLE: Model 1;

DATA: FILE IS prspaper.csv;

VARIABLE:

NAMES ARE

 idme sex

 inc13 inc15 inc17

 hom13 hom15 hom17

 sch13 sch15 sch17

 PRS16 PRS22

 nonagg13 phyagg13 socagg13

 nonagg15 phyagg15 socagg15

 nonagg17 phyagg17 socagg17

 c1 c2 c3 c4 c5

 c6 c7 c8 c9 c10

 c11 c12 c13 c14 c15

 c16 c17 c18 c19 c20

 ;

USEVARIABLES ARE

 sex

 PRS16 ! ASB-PRSchild

 PRS22 ! ASB-PRSadult

nonagg13 phyagg13 socagg13 ! T1 antisocial behaviors

 nonagg15 phyagg15 socagg15 ! T2 antisocial behaviors

 nonagg17 phyagg17 socagg17 ! T3 antisocial behaviors

 hom sch inc

prs16\_hom prs16\_sch

 prs22\_hom prs22\_sch! Interaction variables

 c1 c2 c3 c4 c5

 c6 c7 c8 c9 c10

 c11 c12 c13 c14 c15

 c16 c17 c18 c19 c20 ! Ancestry components

 ;

 Missing are all (-99);

 idvariable = idme;

ANALYSIS:

 estimator = mlr;

DEFINE:

 inc = MEAN(inc13 inc15 inc17);

 hom = MEAN(hom13 hom15 hom17);

 sch = MEAN(sch13 sch15 sch17);

 center

prs16

 prs22

 hom sch inc (grandmean)

 ;

 prs16\_sch = prs16\*sch;

 prs16\_hom = prs16\*hom;

 prs22\_sch = prs22\*sch;

 prs22\_hom = prs22\*hom;

MODEL:

 phyagg by phyagg13 phyagg15 phyagg17;

 socagg by socagg13 socagg15 socagg17;

 nonagg by nonagg13 nonagg15 nonagg17;

 PHYAGG13 WITH NONAGG13 SOCAGG13;

 NONAGG13 WITH SOCAGG13;

 PHYAGG15 WITH NONAGG15 SOCAGG15;

 NONAGG15 WITH SOCAGG15;

 PHYAGG17 WITH NONAGG17 SOCAGG17;

 NONAGG17 WITH SOCAGG17;

 nonagg phyagg socagg on

 sex inc hom sch

 prs16 prs22

 prs16\_hom prs16\_sch

 prs22\_hom prs22\_sch

 c1 c2 c3 c4 c5

 c6 c7 c8 c9 c10

 c11 c12 c13 c14 c15

 c16 c17 c18 c19 c20

 ;

 hom sch inc sex

 prs16\_hom prs16\_sch

 prs22\_hom prs22\_sch

 ;

OUTPUT:

 TECH1 tech4;

 STANDARDIZED CINTERVAL;

 sampstat;

 stdyx;

 modindices (15);

**Appendix S5.** Example Mplus syntax for model 2(b), a three-factor model of residual antisociality at age 15 (i.e., unstable physical aggression, social aggression, and nonaggressive conduct problems) regressed on school violence and harsh parenting at age 15, and ASB-PRS.

TITLE: Age 15 residual model;

DATA: FILE IS prspaper.csv;

VARIABLE:

NAMES ARE

 idme sex

 inc13 inc15 inc17

 hom13 hom15 hom17

 sch13 sch15 sch17

 PRS16 PRS22

 nonagg13 phyagg13 socagg13

 nonagg15 phyagg15 socagg15

 nonagg17 phyagg17 socagg17

 c1 c2 c3 c4 c5

 c6 c7 c8 c9 c10

 c11 c12 c13 c14 c15

 c16 c17 c18 c19 c20

 ;

USEVARIABLES ARE

 sex

 PRS16 ! ASB-PRSchild

 PRS22 ! ASB-PRSadult

 inc15 sch15 hom15

 nonagg13

 phyagg13 socagg13

 nonagg15

 phyagg15 socagg15

 nonagg17

 phyagg17 socagg17

 c1 c2 c3 c4

 c5 c6 c7 c8 c9 c10

 c11 c12 c13 c14 c15

 c16 c17 c18 c19 c20

 prs16\_hom prs16\_sch

 prs22\_hom prs22\_sch

 ;

 Missing are all (-99);

 idvariable = idme;

 ANALYSIS:

 estimator = mlr;

 DEFINE:

 center prs16 prs22

 hom15 sch15 inc15 (grandmean)

 ;

 prs16\_sch = prs16\*sch15;

 prs16\_hom = prs16\*hom15;

 prs22\_sch = prs22\*sch15;

 prs22\_hom = prs22\*hom15;

 MODEL:

!15 FULL MODEL

 phyagg by phyagg13 phyagg15 phyagg17;

 socagg by socagg13 socagg15 socagg17;

 non by nonagg13 nonagg15 nonagg17;

 PHYAGG13 WITH NONAGG13 SOCAGG13;

 NONAGG13 WITH SOCAGG13;

 PHYAGG15res WITH NONAGG15res SOCAGG15res;

 NONAGG15res WITH SOCAGG15res;

 PHYAGG17 WITH NONAGG17 SOCAGG17;

 NONAGG17 WITH SOCAGG17;

 !Age 15 residuals

 PHYAGG15res BY;

 PHYAGG15 ON PHYAGG15res@1;

 PHYAGG15@0;

 PHYAGG15res WITH ov@0;

 SOCAGG15res BY;

 SOCAGG15 ON SOCAGG15res@1;

 SOCAGG15@0;

 SOCAGG15res WITH cov@0;

 nonAGG15res BY;

 nonAGG15 ON nonAGG15res@1;

 nonAGG15@0;

 nonAGG15res WITH non@0;

 NONAGG15res phyagg15res SOCAGG15res on

 sex

 inc15 hom15 sch15

 prs16 prs22

 prs16\_hom prs16\_sch

 prs22\_hom prs22\_sch

 c1 c2 c3 c4 c5

 c6 c7 c8 c9 c10

 c11 c12 c13 c14 c15

 c16 c17 c18 c19 c20

 ;

 sex

 inc15 sch15 hom15

 prs16\_hom prs16\_sch

 prs22\_hom prs22\_sch

 ;

OUTPUT:

 TECH1 tech4;

 STANDARDIZED CINTERVAL;

 sampstat;

 stdyx;

 modindices (15);

**Appendix S6.** R syntax for false discovery rate adjustments.

Model 1 R syntax:

library("stats")

p.adjust(c(#latent model

 #non

 .248, .002, .001, .0004, .017, .051,

.390, .362, .392, .561,

 #phy

 .001, .0004, .020, .0004, .052, .016,

 .788, .255, .177, .177,

 #soc

 .088, .004, .0004, .0004, .091, .195,

 .473, .979, .176, .941

 ), method = "BH")

Model 1 adjusted p-values:

0.347727273 0.007500000 0.004285714 0.002400000 0.046363636 0.111428571

0.004285714 0.002400000 0.050000000 0.002400000 0.111428571 0.046363636

0.170625000 0.013333333 0.002400000 0.002400000 0.170625000 0.292500000

0.470400000 0.470400000 0.470400000 0.623333333 0.844285714 0.347727273

0.279473684 0.279473684 0.545769231 0.979000000 0.279473684 0.973448276

Model 2a R syntax:

p.adjust(c(#age 13 model

 #non

 .286, .611, .048, .090, .046, .339,

 .987, .318, .255, .543,

 #phy

 .0004,.223, .005, .005, .602, .133,

 .633, .691, .979, .362,

 #soc

 .068, .255, .073, .014, .376, .506,

 .978, .918, .773, .701

), method = "BH")

Model 2a adjusted p-values:

0.6128571 0.8256522 0.2400000 0.3000000 0.2400000 0.6266667 0.9870000 0.6266667

0.5884615 0.8145000 0.0120000 0.5884615 0.0500000 0.0500000 0.8256522 0.3990000

0.8256522 0.8412000 0.9870000 0.6266667 0.2737500 0.5884615 0.2737500 0.1050000

0.6266667 0.7989474 0.9870000 0.9870000 0.8919231 0.8412000

Model 2b R syntax:

p.adjust(c(#age 15 model

 #non

 .538, .056, .032, .245, .945,

 .467, .757, .251, .721, .876,

 #phy

 .114,.254,.942,.735,.545,

 .965,.338,.500,.402,.713,

 #soc

 .612,.765,.516,.455,.465,

 .600,.222,.507,.445,.148

), method = "BH")

Model 2b adjusted p-values:

0.8605263 0.8400000 0.8400000 0.8605263 0.9650000 0.8605263 0.8826923 0.8605263

0.8826923 0.9650000 0.8605263 0.8605263 0.9650000 0.8826923 0.8605263 0.9650000

0.8605263 0.8605263 0.8605263 0.8826923 0.8742857 0.8826923 0.8605263 0.8605263

0.8605263 0.8742857 0.8605263 0.8605263 0.8605263 0.8605263

Model 2c R syntax:

p.adjust(c(#age 17 model

 #non

 .821, .897, .401, .001, .062, .708,

 .641, .009, .693, .954,

 #phy

 .848, .481, .099, .052, .521, .097,

 .885, .034, .212, .444,

 #soc

 .704, .183, .610, .173, .483, .755,

 .008, .802, .004, .132

), method = "BH")

Model 2c adjusted p-values:

0.9279310 0.9279310 0.8523529 0.0300000 0.2657143 0.9234783 0.9234783 0.0675000

0.9234783 0.9540000 0.9279310 0.8523529 0.3300000 0.2600000 0.8683333 0.3300000

0.9279310 0.2040000 0.4892308 0.8523529 0.9234783 0.4575000 0.9234783 0.4575000

0.8523529 0.9279310 0.0675000 0.9279310 0.0600000 0.3960000