**Supplemental Material**

**Non-WEIRD studies about birth order effects on intelligence, educational attainment, and personality**

Table S1

*Previous Non-WEIRD Studies About Birth-Order Effects on Intelligence, Educational Attainment, and Personality*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Study** | **Country**  **Sample** | **Outcomes** | **Main analysis**  **Covariates** | **Effect** |
| Abdel-Khalek & Lynn (2008) | Kuwait  *N* = 4,643 | Intelligence  Standard progressive matrices | Between-family analysis:  Sibship size | null |
| Calimeris & Peters (2017) | Indonesia  *N* = 13,444 | Intelligence  Raven’s matrices,numerical test | Within-family analysis:  Education, gender, birth year, test version, size of house, value of assets, number of older / younger siblings, multiple birth | negative |
| Davis, Cahan, & Bashi (1976) | Israel  *N* = 191,993 | Intelligence  Raven’s matrices | Between-family analysis:  Sibship size, ethnicity | parabolic |
| Munroe & Munroe (1983) | Kenya  *N* = 1,400 | Intelligence  Memory, pattern completion, block design | Between-family analysis:  No covariates | negative |
| Velandia, Grandon, & Page (1978) | Colombia  *N* = 36,000 | Intelligence  Verbal and mathematical aptitude, abstract reasoning | Between-family analysis:  Sibship size | parabolic |
| Wilson, Mundy-Castle, & Panditji (1990) | Zimbabwe  *N* = 1,143 | Intelligence  Cattell’s B scale | Between-family analysis:  No covariates | negative |
| Dayioğlu, Kirdar, & Tansel (2009) | Turkey  *N* = 1,733 | Educational attainment | Within-family analysis:  Mother’s age at first marriage, mother’s age, mother’s schooling, father’s schooling, absent father, marital status of the mother, 5 country regions, city residence and its population, ethnic background of the child | parabolic |
| Ejrnæs & Pörtner (2004) | Philippines  *N* = 790 | Educational attainment | Within-family analysis:  Gender, year of birth | positive |
| Emerson & Souza (2008) | Brazil  *N* = 52,365 | Educational attainment | Effects of family variables (e.g., sibship size, birth order) on educational attainment | positive |
| Park & Chung (2012) | Bangladesh  *N* = 4,182 | Educational attainment | Effect of sibship size on educational attainment based on birth order position | positive |
| Tenikue & Verheyden (2010) | 12 African countries  *N* = 95,188 | Educational attainment | Between- and within-family analysis:  Household wealth | positive but only in poorer families |
| Begum, Banu, Jahan, & Begum (1981) | India  *N* = 144 | Personality  Personal preferences | Between-family analysis:  Gender | positive  and antiparabolic |
| Kaur & Dheer (1982) | India  *N* = 90 | Personality  Emotional stability | Between-family analysis:  No information | antiparabolic |
| Sethi & Gupta (1973) | India  *N* = 1,000 | Personality  Psychosomatic disorder | Between-family analysis:  No information | negative |
| Sharma (1987) | India  *N* = 180 | Personality  Personality problems | Between-family analysis:  No information | negative |

*Note.* Studies for personality outcomes based on Indian samples (Begum et al., 1981; Kaur & Dheer, 1982; Sethi & Gupta, 1973; Sharma, 1987) were no longer accessible to us. The information in the table is based solely on the abstracts.

**Multiple imputation**

Table S2

*Variables Used for Multiple Imputation.*

|  |  |
| --- | --- |
| Type of variable | Additional used for multiple imputation |
| Grouping variable | Mother’s ID |
| Covariates | Age; Gender |
| Birth order and sibling count | Naive birth order |
| Naive sibling count |
| Full birth order |
| Full sibling count |
| Intelligence | Raven’s matrices test for older participants 2015 |
| Raven’s matrices test for younger participants 2015 |
| Raven’s matrices test for older participants 2007 |
| Raven’s matrices test for younger participants 2007 |
| Math test for younger participants 2015 |
| Math test for older participants 2007 |
| Math test for younger participants 2007 |
| Counting backwards |
| Delayed word recall test |
| Adaptive number series test |
| Education | Years of education |
| Personality | Extraversion |
| Neuroticism |
| Conscientiousness |
| Agreeableness |
| Openness |
| Additional outcomes | Missed elementary school |
| Worked during elementary school |
| Ever attended school |
| Self-employment |
| Ever smoked |
| Still smoking |
| Wage last month |
| Wage last year |
| Category of work (dummy coded) |
| Sector of work (dummy coded) |

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