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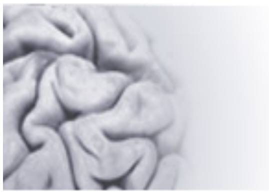

"The relationship between the culture of a child and sex differences in cognitive and non-cognitive measures"

A meta-analysis

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Abstract

Girls perform better at school than boys. There has been a lot of research on sex differences in the cognitive skills cognitive control/inhibition, intelligence and (basic) language skills and the non-cognitive skills motivation, risk seeking/taking, confidence/self-esteem, emotional intelligence, emotion regulation and self-regulation. All these studies are taken into account for this meta-analysis, to finally compare different cultures. We compared the results from Western studies to the results from non-Western studies. This was done to investigate the cultural differences between the sex differences from different cultures. Based on the mean effect sizes for boys and girls and the standardized mean differences for Western and non-Western countries we learned more about the way culture and sex interact for different cognitive and non-cognitive measures. For confidence/self-esteem, emotional intelligence and self-regulation we found that there are different sex effects in Western and non-Western countries, which suggests an interaction between culture and sex.

Introduction

Boys versus girls: although boys generally show a higher full scale IQ than girls (Liu & Lynn, 2015), girls outperform boys in school (Steinmayr & Spinath, 2008). Steinmayr and Spinath are not the first authors to report this finding, the difference has been researched and confirmed in many more articles. Vantieghem & Van Houtte (2015) show that since 1990, there have been multiple studies that show this effect. They mention different aspects of the girls performing better at school: girls get higher grades and do not drop out or repeat classes as much as boys (Vantieghem & Van Houtte, 2015). Given that boys show significantly higher intelligence than girls, this gives rise to the question where the difference in school performance comes from.

There are several possible explanations for this difference. Different hypotheses are genetic differences, the development of the brains of boys and girls, coping mechanisms, teaching styles and many more. Many of these hypotheses have been tested, leading to divergent results.

If the effect could be explained by genetic differences, the effect would be approximately the same for all boys and girls in every part of the world. The question that will be examined in this paper is whether the effect is different for different cultures. In other words, does the culture of a child influence the differences in skills related to school performance between boys and girls? This would mean culture is a mediator in the relationship between sex and school performance.

This research focusses on the difference between Western and non-Western countries. This distinction is based on previous cross-cultural research, and the question whether the expectations of boys and girls are different for different cultures. If boys are expected to perform differently, this can lead them to actually behave differently. Steinmayr & Spinath (2008) wrote about the differences between sex-roles in different cultures. Sex-roles are an important way to distinguish countries from each other, because sex-roles can differ a lot between countries. In non-Western countries, the focus at work and school is more collective, whereas the focus in Western countries is more individualistic. This distinction between Western and non-Western countries is explained by Fukuzawa and Inamasu (2020). They state that non-Westerners see themselves as a member of the community, whereas Westerners see themselves as an independent part of their group. This can cause a different type of motivation within a child, which might lead to sex differences in school performances. The relationship between culture, sex and learning was proposed by Akande, Adewuyi, Akande, & Adetoun in 2016. They found that culture and sex interact when researching learning style. This leads to the question in which way culture influences boys and girls.

Much research has already been done on school-related sex differences in both Western and non-Western countries. The study mentioned above, by Vantieghem & Van Houtte (2015), explained there are sex differences in motivation, leading to differences in different aspects of school performance. This study was based on several Western industrialized countries. A study from New York (Duckworth et al., 2015) showed a different effect. The children were tested on motivation and self-control to explain the difference in academic performance. The results only showed a sex difference in self-control and there was no difference found in motivation. Another study about sex differences in a Western country was done in Japan (Sugihara & Katsurada, 2002). In their study, they tested 10 'feminine' characteristics like innocence and politeness and 10 'masculine' characteristics like persuasiveness and having guts. These characteristics are based on the 'Japanese Gender Role Index', meaning they are typical skills for either boys or girls in Japan, a Western country (see appendix 2 for list of Western countries). This study is useful to explain sex differences using specific cultural sex roles. They did not find differences between boys and girls on any of the skills, which leads to the conclusion that sex differences do not rise from sex specific cultural roles. Looking at these different studies, there is no clear directionality of these results from research in Western countries.

Another study compared sex differences between cultures: Chiu & Chow (2010) performed a study about sex differences in school performance in 41 different countries. They observed that girls who live by more traditional rules show lower reading achievement than girls in other countries. The same effect was found by a research performed by Akande et al. (2016), which states that sex differences in learning strategies are larger in non-Western countries like Botswana than in Western countries like Australia. The effect gives rise to the question whether girls live up to the expectations that the rules of the culture imply. Maybe when someone is given a rigid sex role this can lead to the person performing expectation-confirming behavior. This leads to the hypothesis that the difference between boys and girls is negatively correlated to the development of a country. In other words, when a country develops this leads to a decrease in sex differences, possibly because of a change in expectations for boys and girls. This is a start to answer the question where sex differences in different aspects of school performance come from, since culture seems to play a role when defining the sex differences.

The aim of this study is to test whether the sex-effects and culture-effects mentioned above appear when using a larger sample size. There have been previous meta-analyses on some of the factors we will examine, but they have outdated or we are interested in comparing the results. They are further explained in the 'Discussion' section. For now most studies are not large or recent enough to generalize the results. That is why all relevant articles on this topic will be examined together in a meta-analysis. The aim is to find results supporting or not supporting the hypotheses about a general effect of culture on school performance.

The sex difference in school performance has been established (Steinmayr & Spinath, 2008). To investigate where the difference comes from, several cognitive- and non-cognitive predictors of school performance are used. School performance can be predicted by cognitive control/inhibition, intelligence, (basic) language skills, motivation, risk-seeking/taking, confidence/self-esteem, emotional intelligence, emotion regulation and self-regulation, all described in more detail in the Methods section. These skills have already been tested in boys and girls in many different countries. Many studies on the different cognitive and non-cognitive measures are used for this research. Western and non-Western studies were compared on the skills. Pérez-Arce already proposed an effect of culture on cognitive abilities in 1999, but so far it has never been tested on a scale this large. Therefore, sex differences in all different measures will be examined, using culture as an independent variable.

Duncan and Magnuson (2011, as cited in Davies, Janus, Duku, & Gaskin, 2016) explain the distinction between cognitive and non-cognitive measures. Their studies support the hypothesis that both cognitive and non-cognitive skills are needed for school performance, but cognitive skills are needed for 'school readiness' and non-cognitive skills influence school performance. The research by Davies et al. (2016) point out the importance of both cognitive and non-cognitive skills influencing academic achievement. They concluded that cognitive skills are needed for academic success and non-cognitive skills are important in early development of school-readiness. Since cognitive and non-cognitive skills both seem to influence school performance in different ways, these two types of skills will be tested and compared in this research.

The research question of this paper is: ‘Is there a relationship between the culture of a child and sex differences in cognitive and non-cognitive measures?’ We hypothesize that in non-Western cultures the sex differences in cognitive measures are larger than in Western cultures and that in non-Western cultures the sex differences in non-cognitive measures are larger than in Western cultures.

Method

Participants

The participants examined in this research are school-attending children from 4 to 18 years old. The children are healthy; there are no mental disabilities mentioned.

The used studies were not selected based on culture. After selecting the studies, the participants were divided into two groups: Western and non-Western studies. A list of included countries into the category ‘Western countries’ is included into Appendix 2. All other countries fall under the category of ‘non-Western countries’.

The studies were all collected through Web of Science. The distribution of participants across Western and non-Western countries and boys and girls is displayed in table 1. In some studies the participants were tested on several skills. The participants were counted based on the amount of times their data has been used. In other words, if a participant did two different tasks this participant was counted twice calculating the N_{total}.

Table 1: Distribution of participants across Western and non-Western and boys and girls (N)

	N Western	N Non-Western	N Total
N Girls	412.650	55423	468073
N Boys	412083	55252	467335
N Total	824733	110675	935408

Materials and measuring instruments

After collecting the data according to the cut-off rules, displayed in appendix 3, the different variables were put into a table. These results were transferred into R statistical software (R Core Team, 2013). We used ‘R statistical software’ to calculate mean effect size with probability interval, significance for sex differences, heterogeneity, standardized mean differences and significance for cultural differences for the different cognitive and non-cognitive measures, using the code displayed in appendix 5. In addition, forest plots were generated for all different measures, displayed in appendix 6.

Interpretation

A heterogeneity test was performed to find out whether the different selected studies on a skill are similar and therefore appropriate for comparing in a meta-analysis. A significant result on this test corresponds with a heterogenous sample.

The size of the effect size (ES) indicates the strength of the effect, where a larger absolute value represents a larger effect (Cumming & Finch, 2005). The rule to interpret the effect sizes is defined by Lakens (2013). A commonly used rule to interpret the effect size is by categorizing them 'small': d=0.2, 'medium': d=0.5 or 'large': d=0.8. The confidence interval (95%) of the mean effect size means that the mean effect size for the population has 95% chance to lay within the interval (Altman, Gore, Gardner, & Pocock, 1983). Altman et al. (1983) also explained that a wider interval means there is not enough information: this is a warning against drawing conclusions from the sample, because the sample might be too small. A more narrow distribution shows a more accurate indication of the mean effect size.

Two different values showing significance were calculated. The first 'Sign. ES' is the test for sex differences on the cognitive and non-cognitive measures, this indicates whether there is a significant difference between the boys and girls. The second 'Sign. Culture' is the test for cultural differences within these sex differences. This indicates if there is a significant difference between the results from Western and non-Western countries in sex differences on the specific skill. The significant values are highlighted bold (α=0.05).

The Standardized mean difference (SMD) for the cultural groups were calculated. When there were significant cultural differences in 'Sign. Culture', the SMD was used to understand this difference. The value is calculated by dividing the mean difference from 0 by the within-group standard deviation (Hedges & Vevea, 2001). Negative outcomes for SMD correlate with girls outperforming boys.

Procedure

Since this research is a meta-analysis, the selected studies have different study designs. We include experimental, semi-, and non-experimental designs. Besides that, there are self-reports, parent-reports, teacher-reports and questionnaires included. The studies are compared based on different cognitive- and non-cognitive measures. The cognitive measures included in the study are:

- Cognitive control/inhibition
- Intelligence
- (Basic) language skills

The non-cognitive measures included into the study are:

- Motivation
- Risk-seeking/taking
- Confidence/self-esteem
- Emotional intelligence
- Emotion regulation
- Self-regulation

Before the data collection we also included the variable 'memory'. This variable was left out after collecting the articles, because all relevant studies about memory took place in Western countries which made it impossible to compare the studies from different cultures. While entering the values into the table visible in appendix 4, we reversed Cohen's D for the studies that calculated higher values for negative skills. For 'risk-seeking/taking' we did this for all articles, meaning that a higher score on risk-seeking/taking corresponds with a person who does not take many risks.

The used search terms are: 'TS=("gender" OR "sex") AND TI=("…" OR "…*" OR "…") AND TS= ("child*" OR "adolesc*" OR "teen*") AND TS=("behav*" OR "skill*" OR "perform*"OR "*school*" OR "academi*" OR "education")) AND LANGUAGE: (English) AND DOCUMENT TYPES: (Article)'. On the dots the different cognitive- and non-cognitive measures named above were entered. All included articles are English articles and date from 2009-2020. The results included all articles with the specific cognitive- or non-cognitive measure in the title and topics were school-related or sex-related. The time slot was chosen because a culture may develop and the aim of the study is to define the influence of the present culture. After the selection procedure of the articles, which will be explained in the 'Results' section, the articles were divided into the two cultural groups, depending on the country where the research was performed. All information about the articles, including the origin, was placed into a dataset. Then the articles were compared using the different cognitive and non-cognitive measures mentioned above.

Statistical analysis

The code shown in appendix 5 was used to extract information from the dataset. In this code, the dependent variables are ‘cognitive control/inhibition’, ‘intelligence’, ‘(basic) language skills’, ‘motivation’, ‘risk-seeking/taking’, ‘confidence/self-esteem’, ‘emotional intelligence’, ‘emotion regulation’ and ‘self-regulation’. The independent variable is ‘sex’ and the grouping variable is ‘culture’. Western countries were labeled ‘1’ and non-Western countries were labeled ‘0’.

Results

Using the search terms mentioned in the methods section, 2029 articles were found. Table 2 shows the amount of articles for every exclusion phase for the different cognitive and non-cognitive skills. First, the title and abstracts of these articles were scanned, and the articles relevant to the subject of sex differences in the cognitive- and non-cognitive measures were selected. The other articles were excluded from the study. The remaining articles were read and another exclusion round was performed, leaving the articles that fully met the criteria. 165 articles were included to perform the meta-analysis. Many articles presented results of several experiments, they have been noted separately in appendix 4, leading to a total of 428 articles. The flowchart for these data together with exclusion criteria is added into appendix 3 and a list of all used articles is added into appendix 4. A couple of studies were left out due to missing data about the origin of the study. This happened when data was extracted from both Western- and non-Western countries, but the results were not presented separately.

Table 2: Flowchart results

	Identification	Screening	Eligibility	Included full-text articles
Intelligence	287	97	12	12
Emotional Intelligence	114	72	21	21
Risk seeking/taking	463	280	24	23
Cognitive control/Inhibition	117	53	12	12
Self-regulation	115	53	8	8
Emotion regulation	153	80	17	17

Confidence/Self-esteem	270	181	42	41
(basic) Language skills	135	70	14	10
Motivation	375	113	30	21
Total	2029	934	180	165

Cognitive measures

Table 3 shows the results of the meta-analysis for cognitive measures. The first outcomes are the results for heterogeneity. The null hypothesis for homogeneity was tested and shows that the studies about intelligence and (basic) language skills are heterogenous. The studies on cognitive control/inhibition are homogenous. For cognitive control/inhibition the result of a fixed effect model and for intelligence and (basic) language skills the result of a random effect are noted in table 5.

Table 3: Results cognitive measures

	Mean ES	Mean ES lower	Mean ES upper	Sign. ES	Heterogeneity	Sign. Culture
Cognitive control/ inhibition	-0.137	-0.243	-0.03	**0.017**	0.223	0.824
Intelligence	0.061	0.022	0.101	**0.003**	0	0.188
(Basic) Language skills	-0.315	-0.436	-0.195	**0**	0	0.316

Sign. values highlighted bold, α =.005
Mean ES: mean effect size based on Cohen's D values of included articles. Negative value shows girls performed better than boys
Mean ES lower & Mean ES upper: confidence interval for mean effect size of 95%.
Sign. ES: test for sex differences
Sign. Culture: test for differences Western and non-Western countries

All three cognitive skills show a significant difference for sex. This means there are sex differences for cognitive control/inhibition, intelligence and (basic) language skills. Cognitive control/inhibition ($p=0.017$) has a mean effect size of -0.137, meaning that girls outperformed boys on this skill. The effect size is small ($d < 0.2$), according to the rule mentioned by Lakens (2013). The confidence interval shows a tight range close to 0. The effect is small but significant and the small range indicates a clear effect. Intelligence ($p=0.003$) has a mean effect size of 0.061, meaning boys outperform girls. This is a very small effect size according to the thumb rule mentioned above. The confidence interval factors (0.022 and 0.101) are relatively close together. This means boys do not score much higher on intelligence, but they score higher systematically. (Basic) language skills (p=0.000) has a mean effect size of -0.315, meaning girls outperform boys. The effect size is between 'small' and 'medium' (Lakens, 2013). The range is wider than the range of intelligence. This means the results for how much better girls score on (basic) language skills differ more between the studies. The lower bound of the interval is -0.436, which is almost a 'medium' effect, whereas the upper bound is -0.195, which is a 'small' effect. This means that the effect size of the population falls in between this interval for 95% of the cases, meaning the effect is small to medium for 95% of the cases.

We did not find any significant cultural differences for the cognitive measures. This means that the difference between boys and girls on the skills are relatively the same in Western and non-Western countries. For the cognitive measures, this means boys outperform girls on intelligence in both Western and non-Western countries and girls outperform boys on cognitive control/inhibition and (basic) language skills in both Western and non-Western countries.

Non-cognitive measures

Table 4 shows the results for non-cognitive measures. All heterogeneity tests are significant, meaning the studies on all tested non-cognitive skills are heterogenous. That is why all standardized mean differences in table 6 are generated from a random effect model.

Table 4: results non-cognitive measures

	Mean ES	Mean ES lower	Mean ES upper	Sign. ES	Heterogenity	Sign. Culture
Motivation	-0.502	-1.235	0.249	0.186	0	0.066
Risk-seeking/ taking	-0.391	-0.687	-0.095	**0.012**	0	0.137
Confidence/ self-esteem	0.162	0.083	0.241	**0**	0	**0.005**
Emotional Intelligence	-0.231	-0.412	-0.05	**0.013**	0	**0.011**
Emotion Regulation	0.008	-0.091	0.106	0.872	0	0.292

Self-regulation	-0.081	-0.212	0.05	0.209	0	**0**

Sign. values highlighted bold, α = .005
Mean ES: mean effect size based on Cohen's D values of included articles.
Mean ES lower & Mean ES upper: confidence interval for mean effect size of 95%.
Sign. ES: test for sex differences
Sign. Culture: test for differences Western and non-Western countries

3 out of 6 non-cognitive skills show a significant sex difference. Risk-seeking/taking (p=0.012) has a mean effect size of -0.391, meaning girls performed better and thus show less risk-seeking/taking behavior. The mean effect size is between ‘small’ and ‘medium’. The confidence interval (-0.687 to -0.095) is wide. This means the sex difference is not very generalizable between the used studies, since the results are far apart. Confidence/self-esteem (p=0.000) has a mean effect size of 0.162, meaning boys performed better. The effect is ‘small’ and the confidence interval (0.083 to 0.241) is relatively narrow. This means boys perform better than girls consistently, but the difference is small. Emotional intelligence (p=0.013) has a mean effect size of -0.231, meaning girls perform better than boys. The mean effect size of -0.231 is a ‘small’ effect with a wide confidence interval (-0.412 to -0.050). In other words, girls generally perform better than boys, but the strength of this difference can differ between studies.

The other non-cognitive measures ‘motivation’ (p=0.186), ‘emotion regulation’ (p=0.872) and ‘self-regulation’ (p=0.209) do not show significant sex differences. The probability intervals for these skills all have a negative lower bound and a positive upper bound, meaning more diversity between the studies. In some of the studies on the skills boys performed better, and in other studies girls did. The insignificant outcomes mean the differences between boys and girls are either not there or not large enough to notice.

We found significant cultural differences for 3 skills. The sex difference in confidence/self-esteem is different in Western and non-Western cultures (p=0.005). The standardized mean difference for confidence/self-esteem in Western countries from table 6 is 0.21 and for non-Western this value is 0.03. This means boys perform much better on this skill than girls in Western countries, where this difference is not there in non-Western countries. The sex difference in emotional intelligence is also different in Western and non-Western countries (p=0.011). The standardized mean difference for Western countries is -0.05 and for non-Western countries it is -1.58. This means there is no large difference between boys and girls on emotional intelligence in Western countries, but in non-Western countries girls performed better than boys. There also is a significant cultural difference for self-regulation (p=0.000). This skill is not significantly different for boys and girls (p=0.209). The SMD in Western countries is 0.10 and for non-Western countries this is -0.25. This means in Western countries boys perform better than girls, but in non-Western countries girls perform better than boys. That is why on average there is no significant sex difference.

In table 5 and table 6 the standardized mean differences (SMD) are given for the different cognitive and non-cognitive measures in Western and non-Western countries. These tables are used to explain the significant cultural differences from table 3 and table 4.

Table 5: Standardized mean differences cognitive measures

	SMD Western	SMD non-Western
Cognitive control/inhibition	-0.17	-0.14
Intelligence	0.08	0.02
(Basic) Language skills	-0.28	-0.41

Negative outcomes correlate with girls > boys
SMD from fixed effects model for cognitive control/inhibition
SMD from random effects model for intelligence and (basic) language skills

Table 6: Standardized mean differences non-cognitive measures

	SMD Western	SMD non-Western
Motivation	-0.66	0.2
Risk-seeking/taking	-0.5	-0.1
Confidence/self-esteem	0.21	0.03
Emotional Intelligence	-0.05	-1.58
Emotion Regulation	-0.06	0.04
Self-regulation	0.1	-0.25

Negative outcomes correlate with girls > boys
SMD from random effects model

Discussion

The goal of this study was to examine the generalizable effects of culture on cognitive and non-cognitive measures. We expected that non-Western countries would show larger differences between boys and girls on all tasks. This is incorrect, since the only sex difference that was significantly larger in non-Western countries is in emotional intelligence. In these countries girls perform better than boys. In Western countries boys performed better than girls at confidence/self-esteem and self-regulation. Steinmayr & Spinath (2008) wrote about sex roles and especially about the importance of those roles to distinguish cultures. The results of this study partially substantiate the idea that sex roles play a role when defining a culture, since the sex differences for emotional intelligence, confidence/self-esteem and self-regulation do differ for the different cultures. Using that information, we learn more about the specific sex roles in different cultures. The observed results on all cognitive and non-cognitive measures lead to divergent effects that will be elucidated and compared to currently existing information.

In the first hypothesis we suggested that sex differences for cognitive measures would be larger in Non-Western countries than in Western countries. This was proven wrong, since the sex differences in cognitive measures are not significantly different in Western and non-Western countries. The first hypothesis can be rejected. The second hypothesis suggested that sex differences in non-cognitive measures in non-Western cultures are larger than in in Western cultures. This effect only occurs for emotional intelligence. For confidence/self-esteem the difference is larger in Western countries. For motivation, risk-seeking/taking, emotion regulation and self-regulation the sex differences did not show a significant difference between Western and non-Western countries. This means the hypothesis can be accepted for emotional intelligence only, and the hypothesis should be rejected for the other measures.

Perspective of current literature for cognitive measures

In this study cognitive control/inhibition showed a significant advantage for girls. This effect is relatively small and not significantly different for the two cultures. This is in line with findings of an earlier meta-analysis performed by Shoberg (2013). His results also suggested that girls show better results for cognitive control/inhibition than boys with a mean effect size of 0.319, where we found a mean effect size of -0.137 in our own study. The effect found by Shoberg is larger than our effect. This difference can be explained by the sample sizes of the studies: in our own analysis we used information of 935408 participants, where Shoberg used information of 21314 participants. Our study was much larger, which lead to a more moderate overall effect. Shoberg (2013) also investigated the cultural differences and found that this effect is general for all tested cultures. That is also in line with our research.

For intelligence we found a significant effect where boys outperform girls. This in line with an earlier meta-analysis performed by Born, Bleichrodt and Flier (1987). They concluded that boys generally score higher than girls on intelligence tests. This difference is significant for all cultures, but most for Western, African and Asian countries. In our own analysis we did not find a significant difference between Western and non-Western countries on sex differences in intelligence. This difference was not tested by Born et al. (1987), but the effect that boys performed better than girls on intelligence occurred in all cultures. That is a similar outcome to our own, and we can not compare the cultural differences for Western and non-Western countries since they have not been tested on a big scale so far.

(Basic) language skills show the largest mean effect size out of all cognitive measures (mean ES= -0.315). This is in line with earlier research. Barbu et al. (2015) reported a growing number of researchers finding an effect of girls outperforming boys on all facets of language skills. This is in line with the significant result of the test for sex differences (p=0.000). We did not find a significant effect for cultural differences (p=0.316) which means girls perform better than boys in all cultures. This is also in line with previous studies: sex differences in language skills are the same across all languages and countries (Bornstein & Cote, 2005, as cited in Barbu et al., 2015).

Perspective of current literature for non-cognitive measures

Our findings about motivation support the idea that there are no sex differences in motivation, and this null-result is generalizable over cultures. This is not in line with a previous meta-analysis performed by Steinkamp & Maehr (1984). They reported an advantage for boys when testing motivation towards learning science. This advantage is small (mean ES=0.04), but significant. They also examined the influence of culture, leading to the conclusion that more developed (Western) countries like Japan and Australia showed a larger advantage for boys. We did not find a significant result when testing for cultural differences in motivation. This difference can be explained by development in sex roles, since the research performed by Steinkamp & Maehr was published in 1984, 36 years ago. The sex roles may have changed in the meantime, leading to the cuttent absence of cultural- or sex differences in motivation.

We found that risk-seeking/taking occurs more by boys than by girls. This effect is general for both Western and non-Western cultures. This is in line with a previous meta-analysis performed by Byrnes, Miller & Schafer (1999). They concluded that sex differences in risk-seeking/taking can vary across category of risk-taking or age, but generally support the idea that boys take more risks than girls. We found a mean ES of -0.391, where Byrnes, Miller & Shafer found a mean ES of 0.13. Our absolute effect is larger, which can be explained by the method of gathering data. Byrnes et al. included all articles involving risk-seeking/taking, where we included articles related to school performance. This leads to a different sample and therefore to different results. We can conclude that boys take more risks than girls, and even more school-related risks. No cultural differences are mentioned, which is in line with previous literature.

The next skill we investigated is confidence/self-esteem. We found that boys score higher on this measure, but there is a significant effect of culture which shows that this effect only occurs in Western countries. This is partly in line with past research. Bleidorn et al. (2015) also researched this topic, using a sample of 985937 participants. It was not a meta-analysis but a large examination about participants from different countries. They found that boys score significantly higher than girls on confidence/self-esteem. This effect was found for all different countries, and did not show significant differences between the countries. We found the same sex effect only for Western countries. This difference can be explained by sample characteristics: their research used a smaller variety of countries, where we used many more.

We also found that girls perform better than boys on emotional intelligence. This sex difference is not the same in all cultures: it is only present in non-Western countries. Our results are in line with the information from another meta-analysis. A previous meta-analysis concluded an advantage for girls on emotional intelligence (Joseph & Newman, 2010, as cited in Fernández-Berrocal et al., 2012). They found a mean ES of 0.29 and we found a mean ES of -0.231, which are small effects. Both studies are based on a combination of task-performance and self-reported results. Another study on emotional intelligence pointed out that collectivism has a positive influence on emotional intelligence (Gunkel, Schlägel, & Engle, 2014). This was a systematic analysis with a sample size of 2067 participants. This means that people in non-Western countries should be better at emotional intelligence than people in Western countries. For our study this would mean that culture influences emotional intelligence in the way that girls are stimulated to perform better than boys in non-Western countries, where this does not happen in Western countries.

The results for emotion regulation did not show a sex difference and this was general for Western and non-Western cultures. There has not been another meta-analysis on sex differences in emotion regulation. Other literature on emotion regulation suggests women have access to more strategies and use them more flexibly than men (Goubet & Chrysikou, 2019). This effect was also found by McRae et al. in 2008, who examined the neural base of emotion regulation. Research by Kwon, Yoon, Joormann, & Kwon (2013) does not suggest a sex difference, but highlights the influence of culture on emotion regulation when comparing a Korean and American sample. Participants in this study used significantly different strategies: Koreans showed more brooding and Americans showed more anger suppression. We did not find a connection between culture and emotion regulation, which is inconsistent with the available literature. This can be explained by the depth of emotion regulation we tested. In our study we extracted data about the 'level' of emotion regulation, instead of the type of emotion regulation. The studies mentioned above all examined the type of emotion regulation, which makes the comparison more heterogenous.

For self-regulation we found that in Western cultures boys perform better, and in non-Western cultures girls do. There have not been previous meta-analyses about this sex-difference. A study from Canada suggested that there is no sex difference in traits, but there is a fluctuating sex difference based on the female menstrual cycle (Hosseini-Kamkar & Morton, 2014). They concluded that women are less impulsive than men during the fertile phase of the cycle. Comparing to our findings this would mean the sex difference is not caused by different expectations from boys and girls, but a difference between hormonal levels influences the differences in self-regulation. There are no articles comparing different cultures, and the articles that perform a research are used into our own meta-analysis. That makes our findings novel to the field of research.

Explanations

Altogether, the results on sex differences for all cognitive measures and for risk-seeking/taking, confidence/self-esteem and emotional intelligence are approximately in line with previous literature. The effect sizes are not all the same, which can be explained by the used methods for the analysis. The results for motivation are not in line with the literature, which is explained by the time frame of the study. Results for emotion regulation and self-regulation are not compared with previous meta-analyses due to a lack of studies. Our results on cultural differences for the three tested cognitive measures all suggest that culture does not explain the sex differences for the skills. This is in line with the literature. For non-cognitive measures, the results for risk-seeking/taking, confidence/self-esteem and emotional intelligence show cultural differences that fit into the current literature. For motivation we did not find cultural differences, where Steinkamp & Maehr (1984) found that culture influences the sex difference, since boys are relatively more motivated in Western countries. This difference is explained by the changing expectations of boys and girls. This finding suggests the theory that motivation is at least partially influenced by cultural factors since the changing culture lead to a change in sex differences in motivation. For emotion regulation our research was not specific enough to compare to other cross-cultural research on emotion regulation. The most surprising result was found for self-regulation. Previous to the study we did not have any literature to compare our results for self-regulation to. We found that boys perform better than girls in Western countries and girls perform better than boys in non-Western countries. This result can be a starting point in future research on this topic, and examined to find out the cause of the cultural difference.

Other explanations for the found effects could be found in the method of the meta-analysis. There was no equal distribution of articles between the countries in the world. The analysis using 'R' corrects for the amount of Western and non-Western countries. However, within the categories Western and non-Western the data can originate from many different countries. This is because we used all relevant articles found using the search terms, leading to an unequal distribution of countries that are taken into account. Before performing the analysis we divided the countries into the categories, so the original countries were not compared. Within both cultural groups there is a large variety of underlying cultures. The analysis in this form does not specifically calculate the differences between these cultures, which can lead to over- or under-generalization of an effect.

Limitations

A difficulty about this analysis is the specification of the tested skills. Motivation for example can hold information about different types of motivation (eg. intrinsic motivation, reading motivation, extrinsic motivation for mathematics etc.). We decided to test the skills all combined. Based on the outcomes from this research we were able to state the general sex- and cultural differences about the skills. This is a first step into understanding the differences and the cause of the differences, but it is not enough to draw conclusions about the origin of the differences. More research is needed to understand the outcomes of this meta-analysis.

Future research

For future research it would be interesting to investigate the specific differences between the countries themselves and to investigate the different cognitive and non-cognitive skills more deeply. For a meta-analysis, it would be interesting to compare more countries than only Western and non-Western. The countries can also be grouped into continents or religions. That way, a theory can be made up about the way culture influences the results on specific skills, instead of just stating the presence of a difference.

Concluding paragraph

The cultural and sex differences for the three cognitive measures are in line with previous literature. They do not show significant cultural differences, meaning the found sex differences are equal in Western and non-Western countries. The same counts for motivation, risk-seeking/taking and emotion regulation. For motivation this is not in line with existing information, meaning the effect has changed over time, possibly together with the culture. For confidence/self-esteem, emotional intelligence and self-regulation the sex differences are not equal in Western and non-Western countries. For confidence/self-esteem this difference is not in line with the existing literature, which we explained by sample size. For emotional intelligence and self-regulation there is not enough literature to compare our outcomes to, which makes our outcomes novel to this field of research. Altogether the different factors that influence the sex difference in school performance have been investigated and we hope this will serve as a first step into more research on this.

Appendix 1: literature

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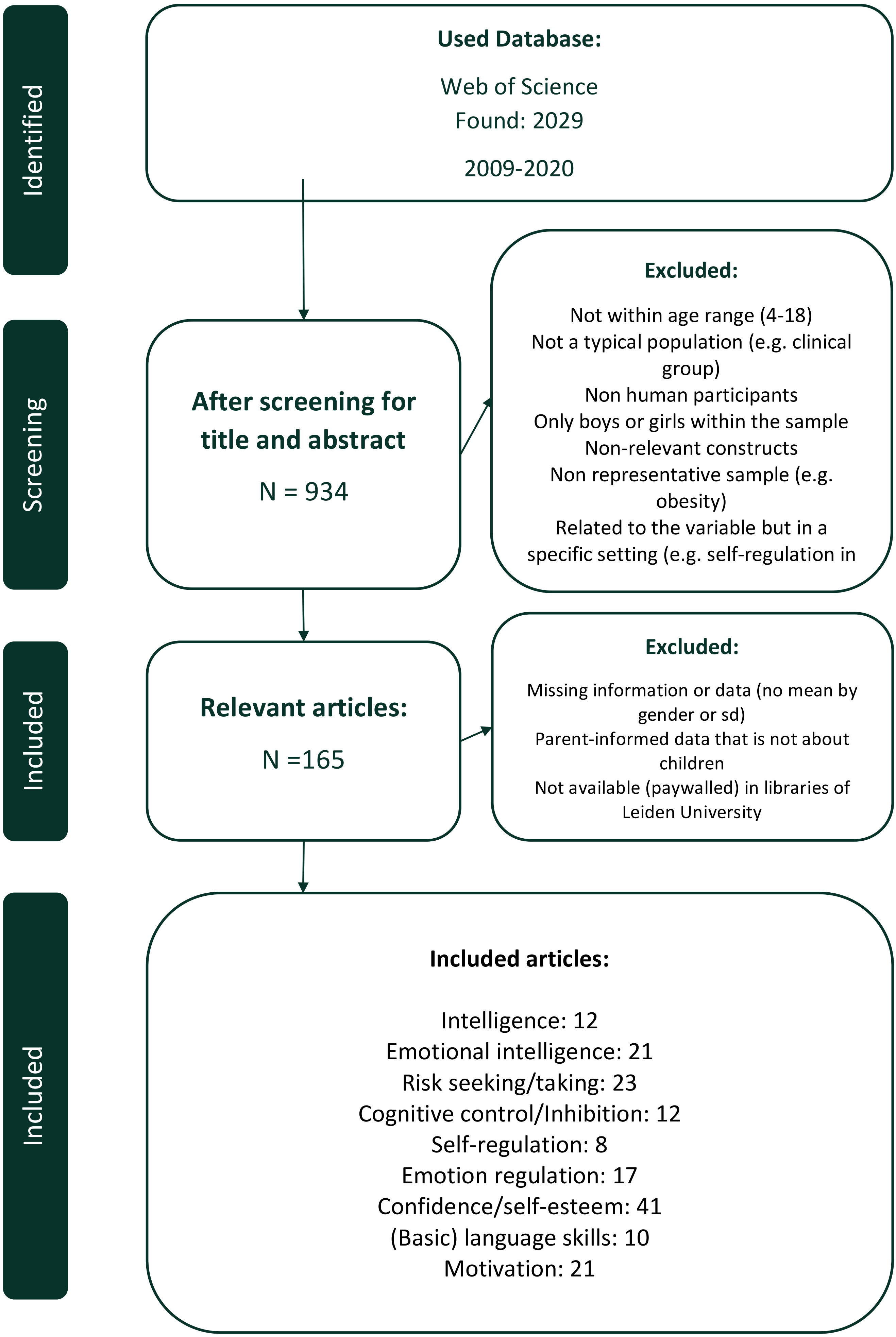
Appendix 2: list of Western Countries by Minestry of Foreign Affairs

"Andorra
Australië
Azoren (Portugal)
Barbados
België
Bermuda (Brits overzees gebied)
Canada
Canarische Eilanden (Spanje)
Cyprus
Denemarken (exclusief Groenland)
Duitsland
Finland
Frankrijk
Gibraltar (Brits overzees gebied)
Griekenland
Groot Brittannië
Hawaï (Verenigde Staten)
Hongarije
Ierland
IJsland
Italië
Japan
Liechtenstein
Luxemburg
Madeira (Portugal)
Malta
Monaco
Nederland
Nieuw Zeeland
Noorwegen
Oostenrijk
Portugal (incl. Azoren)
San Marino
Slowakije
Spanje
St. Pierre en Miquelon (Frans overzees gebied)
Tsjechië
USA
Verenigd Koninkrijk
Verenigde Staten van Amerika
Zweden
Zwitserland"

Appendix 3: Flow chart and cut-off rules


Identified
Used Database:
Web of Science
Found: 2029
2009-2020
Screening
After screening for title and abstract
N = 934
Excluded:
Not within age range (4-18)
Not a typical population (e.g. clinical group)
Non human participants
Only boys or girls within the sample
Non-relevant constructs
Non representative sample (e.g. obesity)
Related to the variable but in a specific setting (e.g. self-regulation in
Included
Relevant articles:
N =165
Excluded:
Missing information or data (no mean by gender or sd)
Parent-informed data that is not about children
Not available (paywalled) in libraries of Leiden University
Included
Included articles:
Intelligence: 12
Emotional intelligence: 21
Risk seeking/taking: 23
Cognitive control/Inhibition: 12
Self-regulation: 8
Emotion regulation: 17
Confidence/self-esteem: 41
(Basic) language skills: 10
Motivation: 21

Appendix 4: List of used articles

Appendix 4.1.1: Cognitive control/inhibition

First author	Year	Task	N total	N girls	N boys	Calculated_ D	Country
Chung. YS; Calhoun. V; Stevens. MC	2019	Go/No-Go task	130	64	66	0,035958143	USA
Li. Q; Dai. WN; Zhong. Y; Wang. LX; Dai. BB; Liu. X	2019	Young's Diagnostic Questionnaire for Internet Addiction; Problem-Coping	416	212	204	-0,214927542	China
Li. Q; Dai. WN; Zhong. Y; Wang. LX; Dai. BB; Liu. X	2019	Young's Diagnostic Questionnaire for Internet Addiction. Impulsiveness	416	212	204	0,105991144	China
Li. Q; Dai. WN; Zhong. Y; Wang. LX; Dai. BB; Liu. X	2019	Young's Diagnostic Questionnaire for Internet Addiction. Behavioral inhibition system	416	212	204	-0,332674409	China
Li. Q; Dai. WN; Zhong. Y; Wang. LX; Dai. BB; Liu. X	2019	Young's Diagnostic Questionnaire for Internet Addiction. Behavioral approach system	416	212	204	-0,291340879	China
Alarcon. G; Pfeifer. JH; Fair. DA; Nagel. BJ	2018	SRP Task	49	25	24	-0,170967809	USA
Nolin. P; Stipanicic. A; Henry. M; Lachapelle. Y; Lussier-Desrochers. D; Rizzo. A; Allain. P	2016	ClinicaVR Test	102	53	49	-0,110171163	Canada

Liu. TR; Xiao. T; Shi. JN	2012	Go/No-Go task	32	18	14	-0,346524662	China
Sijtsema. JJ; Veenstra. R; Lindenberg. S; van Roon. AM; Verhulst. FC; Ormel. J; Riese. H	2010	Neo-PI-PR	1332	713	619	-0,154288546	Netherlands
Rosenberg-Kima. RB; Sadeh. A	2010	The balloon task	134	81	53	-0,140788583	Israel
Chasiotis. A; Kiessling. F; Hofer. J; Campos. D	2010	Inhibitory control tasks	314	154	160	-0,098577513	Germany. Costa Rica. Cameroon
Herba. CM; Tranah. T; Rubia. K; Yule. W	2016	Stop task	53	24	29	0,402263851	

First author	Year	Task	N total	N girls	N boys	Calculated_D	Country
Chung. YS; Calhoun. V; Stevens. MC	2019	Go/No-Go task	130	64	66	0,035958143	USA
Li. Q; Dai. WN; Zhong. Y; Wang. LX; Dai. BB; Liu. X	2019	Young's Diagnostic Questionnaire for Internet Addiction; Problem-Coping	416	212	204	-0,214927542	China
Li. Q; Dai. WN; Zhong. Y; Wang. LX; Dai. BB; Liu. X	2019	Young's Diagnostic Questionnaire for Internet Addiction. Impulsiveness	416	212	204	0,105991144	China
Li. Q; Dai. WN; Zhong. Y; Wang. LX; Dai. BB; Liu. X	2019	Young's Diagnostic Questionnaire for Internet Addiction. Behavioral inhibition system	416	212	204	-0,332674409	China

Li. Q; Dai. WN; Zhong. Y; Wang. LX; Dai. BB; Liu. X	2019	Young's Diagnostic Questionnaire for Internet Addiction. Behavioral approach system	416	212	204	-0,291340879	China
Alarcon. G; Pfeifer. JH; Fair. DA; Nagel. BJ	2018	SRP Task	49	25	24	-0,170967809	USA
Nolin. P; Stipanicic. A; Henry. M; Lachapelle. Y; Lussier-Desrochers. D; Rizzo. A; Allain. P	2016	ClinicaVR Test	102	53	49	-0,110171163	Canada
Liu. TR; Xiao. T; Shi. JN	2012	Go/No-Go task	32	18	14	-0,346524662	China
Sijtsema. JJ; Veenstra. R; Lindenberg. S; van Roon. AM; Verhulst. FC; Ormel. J; Riese. H	2010	Neo-PI-PR	1332	713	619	-0,154288546	Netherlands
Rosenberg-Kima. RB; Sadeh. A	2010	The balloon task	134	81	53	-0,140788583	Israel
Chasiotis. A; Kiessling. F; Hofer. J; Campos. D	2010	Inhibitory control tasks	314	154	160	-0,098577513	Germany. Costa Rica. Cameroon
Herba. CM; Tranah. T; Rubia. K; Yule. W	2016	Stop task	53	24	29	0,402263851	

Appendix 4.1.2: intelligence

First author	Year	Task	N total	N girls	N boys	Calculated_D	Country
Gil-Espinosa, FJ; Chillon, P; Cadenas-Sanchez, C	**2019**	**General intelligence assessed by the D48 test**	**129**	**55**	**74**	**0,144515723**	**Spain**
Ziada, KE; Metwaly, HAM; Bakhiet, SF; Cheng, H; Lynn, R	**2019**	**Intelligence assessed by Raven's Coloured Progressive Matrices (CPM)**	**128**	**63**	**65**	**-0,356111844**	**Egypt**

Ziada, KE; Metwaly, HAM; Bakhiet, SF; Cheng, H; Lynn, R	**2019**	**Intelligence assessed by Raven's Coloured Progressive Matrices (CPM)**	**230**	**111**	**119**	**0,288141975**	**Egypt**
Ziada, KE; Metwaly, HAM; Bakhiet, SF; Cheng, H; Lynn, R	**2019**	**Intelligence assessed by Raven's Coloured Progressive Matrices (CPM)**	**268**	**148**	**121**	**0,041149525**	**Egypt**
Ziada, KE; Metwaly, HAM; Bakhiet, SF; Cheng, H; Lynn, R	**2019**	**Intelligence assessed by Raven's Coloured Progressive Matrices (CPM)**	**350**	**171**	**179**	**0,296068328**	**Egypt**
Ziada, KE; Metwaly, HAM; Bakhiet, SF; Cheng, H; Lynn, R	**2019**	**Intelligence assessed by Raven's Coloured Progressive Matrices (CPM)**	**326**	**170**	**156**	**0,115692603**	**Egypt**
Ziada, KE; Metwaly, HAM; Bakhiet, SF; Cheng, H; Lynn, R	**2019**	**Intelligence assessed by Raven's Coloured Progressive Matrices (CPM)**	**304**	**152**	**152**	**0,038107026**	**Egypt**
Ziada, KE; Metwaly, HAM; Bakhiet, SF; Cheng, H; Lynn, R	**2019**	**Intelligence assessed by Raven's Coloured Progressive Matrices (CPM)**	**149**	**78**	**71**	**0,10124241**	**Egypt**
Heikkinen, T; Rusanen, J; Sato, K; Pesonen, P; Harila, V; Alvesalo, L	**2018**	**Intelligence assessed by Stanford–Binet IQ**	**782**	**376**	**406**	**-0,193097585**	**USA**
Pezzuti, L; Orsini, A	**2016**	**IQ: Similarity measured by the WISC-IV**	**2200**	**1100**	**1100**	**0,120434347**	**Italy**
Pezzuti, L; Orsini, A	**2016**	**IQ:Vocabulary measured by the WISC-IV**	**2200**	**1100**	**1100**	**0,122988009**	**Italy**
Pezzuti, L; Orsini, A	**2016**	**IQ: Comprehension measured by the WISC-IV**	**2200**	**1100**	**1100**	**0,040996003**	**Italy**
Pezzuti, L; Orsini, A	**2016**	**IQ: Block design measured by the WISC-IV**	**2200**	**1100**	**1100**	**0,160579129**	**Italy**
Pezzuti, L; Orsini, A	**2016**	**IQ: Picture Concepts measured by the WISC-IV**	**2200**	**1100**	**1100**	**-0,040824829**	**Italy**
Pezzuti, L; Orsini, A	**2016**	**IQ: Matrix Reasoning measured by the WISC-IV**	**2200**	**1100**	**1100**	**-0,040996003**	**Italy**
Pezzuti, L; Orsini, A	**2016**	**IQ: Digit span measured by the WISC-IV**	**2200**	**1100**	**1100**	**0**	**Italy**

Pezzuti, L; Orsini, A	**2016**	**IQ: Letter-Number Sequencing measured by the WISC-IV**	**2200**	**1100**	**1100**	**0**	**Italy**
Pezzuti, L; Orsini, A	**2016**	**IQ: Coding measured by the WISC-IV**	**2200**	**1100**	**1100**	**-0,427569125**	**Italy**
Pezzuti, L; Orsini, A	**2016**	**IQ: Symbol search measured by the WISC-IV**	**2200**	**1100**	**1100**	**-0,167468128**	**Italy**
Pezzuti, L; Orsini, A	**2016**	**IQ: Verbal Comprehension Index measured by the WISC-IV**	**2200**	**1100**	**1100**	**0,11511865**	**Italy**
Pezzuti, L; Orsini, A	**2016**	**IQ: Perceptual Reasoning Index measured by the WISC-IV**	**2200**	**1100**	**1100**	**0,053795976**	**Italy**
Pezzuti, L; Orsini, A	**2016**	**IQ: Working Memory Index measured by the WISC-IV**	**2200**	**1100**	**1100**	**0,008969602**	**Italy**
Pezzuti, L; Orsini, A	**2016**	**IQ: Processing Speed Index measured by the WISC-IV**	**2200**	**1100**	**1100**	**-0,400372402**	**Italy**
Pezzuti, L; Orsini, A	**2016**	**Full Scale Intelligence Quotient measured by the WISC-IV**	**2200**	**1100**	**1100**	**-0,03607852**	**Italy**
Bakhiet, SFA; Lynn, R	**2015**	**Picture completion measured by the Wechsler Intelligence Scale for Children–III (WISC–III)**	**1018**	**545**	**473**	**0,01986567**	**Bahrain**
Bakhiet, SFA; Lynn, R	**2015**	**Information measured by the Wechsler Intelligence Scale for Children–III (WISC–III)**	**1018**	**545**	**473**	**-0,097837427**	**Bahrain**
Bakhiet, SFA; Lynn, R	**2015**	**Coding measured by the Wechsler Intelligence Scale for Children–III (WISC–III)**	**1018**	**545**	**473**	**-0,154232133**	**Bahrain**

Bakhiet, SFA; Lynn, R	2015	Similarities measured by the Wechsler Intelligence Scale for Children–III (WISC–III)	1018	545	473	-0,237095627	Bahrain
Bakhiet, SFA; Lynn, R	2015	Picture arrangement measured by the Wechsler Intelligence Scale for Children–III (WISC–III)	1018	545	473	0,070440582	Bahrain
Bakhiet, SFA; Lynn, R	2015	Arithmetic measured by the Wechsler Intelligence Scale for Children–III (WISC–III)	1018	545	473	0,155057647	Bahrain
Bakhiet, SFA; Lynn, R	2015	Block design measured by the Wechsler Intelligence Scale for Children–III (WISC–III)	1018	545	473	0,197099296	Bahrain
Bakhiet, SFA; Lynn, R	2015	Vocabulary measured by the Wechsler Intelligence Scale for Children–III (WISC–III)	1018	545	473	-0,072451676	Bahrain
Bakhiet, SFA; Lynn, R	2015	Object assembly measured by the Wechsler Intelligence Scale for Children–III (WISC–III)	1018	545	473	0,102468076	Bahrain
Bakhiet, SFA; Lynn, R	2015	Comprehension measured by the Wechsler Intelligence Scale for Children–III (WISC–III)	1018	545	473	-0,068247397	Bahrain
Bakhiet, SFA; Lynn, R	2015	Symbol search measured by the Wechsler Intelligence Scale for Children–III (WISC–III)	1018	545	473	0,045038678	Bahrain

Bakhiet, SFA; Lynn, R	**2015**	**Digit span measured by the Wechsler Intelligence Scale for Children–III (WISC–III)**	**1018**	**545**	**473**	**-0,25391235**	**Bahrain**
Bakhiet, SFA; Lynn, R	**2015**	**Mazes measured by the Wechsler Intelligence Scale for Children–III (WISC–III)**	**1018**	**545**	**473**	**0,333465009**	**Bahrain**
Bakhiet, SFA; Lynn, R	**2015**	**Verbal IQ measured by the Wechsler Intelligence Scale for Children–III (WISC–III)**	**1018**	**545**	**473**	**-0,134166114**	**Bahrain**
Bakhiet, SFA; Lynn, R	**2015**	**Performance IQ measured by the Wechsler Intelligence Scale for Children–III (WISC–III)**	**1018**	**545**	**473**	**0,0609179**	**Bahrain**
Bakhiet, SFA; Lynn, R	**2015**	**Full Scale IQ measured by the Wechsler Intelligence Scale for Children–III (WISC–III)**	**1018**	**545**	**473**	**-0,047885071**	**Bahrain**
Liu, JH; Lynn, R	**2015**	**Information measured by the The Chinese version of the Wechsler Intelligence Scale for Children-Revised (WISC-R)**	**788**	**362**	**426**	**0,51165678**	**China**
Liu, JH; Lynn, R	**2015**	**Comprehension measured by the The Chinese version of the Wechsler Intelligence Scale for Children-Revised (WISC-R)**	**788**	**362**	**426**	**-0,004972329**	**China**
Liu, JH; Lynn, R	**2015**	**Similarities measured by the The Chinese version of the Wechsler Intelligence Scale for Children-Revised (WISC-R)**	**788**	**362**	**426**	**0,005206456**	**China**

Liu, JH; Lynn, R	**2015**	**Arithmetic measured by the The Chinese version of the Wechsler Intelligence Scale for Children-Revised (WISC-R)**	**788**	**362**	**426**	**0,11889534**	**China**
Liu, JH; Lynn, R	**2015**	**Vocabulary measured by the The Chinese version of the Wechsler Intelligence Scale for Children-Revised (WISC-R)**	**788**	**362**	**426**	**-0,035202166**	**China**
Liu, JH; Lynn, R	**2015**	**Picture arrangement measured by the The Chinese version of the Wechsler Intelligence Scale for Children-Revised (WISC-R)**	**788**	**362**	**426**	**0,407346396**	**China**
Liu, JH; Lynn, R	**2015**	**Picture completion measured by the The Chinese version of the Wechsler Intelligence Scale for Children-Revised (WISC-R)**	**788**	**362**	**426**	**0,214030213**	**China**
Liu, JH; Lynn, R	**2015**	**Block design measured by the The Chinese version of the Wechsler Intelligence Scale for Children-Revised (WISC-R)**	**788**	**362**	**426**	**0,22419096**	**China**
Liu, JH; Lynn, R	**2015**	**Object assembly measured by the The Chinese version of the Wechsler Intelligence Scale for Children-Revised (WISC-R)**	**788**	**362**	**426**	**0,455655385**	**China**
Liu, JH; Lynn, R	**2015**	**Coding measured by the The Chinese version of the Wechsler Intelligence Scale for Children-Revised (WISC-R)**	**788**	**362**	**426**	**-0,473880033**	**China**
Liu, JH; Lynn, R	**2015**	**Verbal IQ measured by the The Chinese version of the Wechsler Intelligence Scale for Children-Revised (WISC-R)**	**788**	**362**	**426**	**0,205413219**	**China**

Liu, JH; Lynn, R	2015	Performance IQ measured by the The Chinese version of the Wechsler Intelligence Scale for Children-Revised (WISC-R)	788	362	426	0,346251908	China
Liu, JH; Lynn, R	2015	Full scale IQ measured by the The Chinese version of the Wechsler Intelligence Scale for Children-Revised (WISC-R)	788	362	426	0,332567395	China
Carreras, MR; Braza, P; Munoz, JM; Braza, F; Azurmendi, A; Pascual-Sagastizabal, E; Cardas, J; Sanchez-Martin, JR	2014	Social Intelligence assessed by teachers with the Peer-Estimated Social Intelligence (PESI)	117	64	63	-0,027716851	Spain
Ezenwosu, O; Emodi, I; Ikefuna, A; Chukwu, B	2013	IQ measured by the Draw-APerson Test (DAPT) proposed by Ziler and validated in Nigeria	90	35	55	-0,108336441	Nigeria
Lemos, GC; Abad, FJ; Almeida, LS; Colom, R	2013	Abstract Reasoning Intelligence was assessed through the Reasoning Test Battery (RTB)	1714	886	828	0,108898429	Portugal
Lemos, GC; Abad, FJ; Almeida, LS; Colom, R	2013	Numerical Reasoning Intelligence was assessed through the Reasoning Test Battery (RTB)	1714	886	828	0,104401419	Portugal
Lemos, GC; Abad, FJ; Almeida, LS; Colom, R	2013	Verbal Reasoning Intelligence was assessed through the Reasoning Test Battery (RTB)	1714	886	828	0,106326512	Portugal
Lemos, GC; Abad, FJ; Almeida, LS; Colom, R	2013	Mechanical Reasoning Intelligence was assessed through the Reasoning Test Battery (RTB)	1714	886	828	0,827256194	Portugal
Lemos, GC; Abad, FJ; Almeida, LS; Colom, R	2013	Spatial Reasoning Intelligence was assessed through the Reasoning Test Battery (RTB)	1714	886	828	0,105141778	Portugal

Liu, JH; Lynn, R	**2011**	**Information measured by the Chinese version of the Wechsler Preschool and Primary Scale of Intelligence (WPPSI)**	**1331**	**603**	**728**	**0,225499848**	**China**
Liu, JH; Lynn, R	**2011**	**Vocabulary measured by the Chinese version of the the Wechsler Preschool and Primary Scale of Intelligence (WPPSI)**	**1331**	**603**	**728**	**0,242741663**	**China**
Liu, JH; Lynn, R	**2011**	**Arithmetic measured by the The Chinese version of the Wechsler Preschool and Primary Scale of Intelligence (WPPSI)**	**1331**	**603**	**728**	**0,1604887**	**China**
Liu, JH; Lynn, R	**2011**	**Similarities measured by the The Chinese version of the Wechsler Preschool and Primary Scale of Intelligence (WPPSI)**	**1331**	**603**	**728**	**-0,127267038**	**China**
Liu, JH; Lynn, R	**2011**	**Comprehension measured by the The Chinese version of the Wechsler Preschool and Primary Scale of Intelligence (WPPSI)**	**1331**	**603**	**728**	**0,297140559**	**China**
Liu, JH; Lynn, R	**2011**	**Animal house measured by the The Chinese version of the Wechsler Preschool and Primary Scale of Intelligence (WPPSI)**	**1331**	**603**	**728**	**0,048245098**	**China**
Liu, JH; Lynn, R	**2011**	**Picture completion measured by the The Chinese version of the Wechsler Preschool and Primary Scale of Intelligence (WPPSI)**	**1331**	**603**	**728**	**0,140633613**	**China**
Liu, JH; Lynn, R	**2011**	**Mazes measured by the The Chinese version of the Wechsler Preschool and Primary Scale of Intelligence (WPPSI)**	**1331**	**603**	**728**	**0,469026696**	**China**

Liu, JH; Lynn, R	**2011**	**Geometric design measured by the The Chinese version of the Wechsler Preschool and Primary Scale of Intelligence (WPPSI)**	**1331**	**603**	**728**	**-0,046828039**	**China**
Liu, JH; Lynn, R	2011	Block design measured by the The Chinese version of the Wechsler Preschool and Primary Scale of Intelligence (WPPSI)	1331	603	728	0,119730662	China
Liu, JH; Lynn, R	2011	Verbal IQ measured by the The Chinese version of the Wechsler Preschool and Primary Scale of Intelligence (WPPSI)	1331	603	728	0,165551909	China
Liu, JH; Lynn, R	2011	Performance IQ measured by the The Chinese version of the Wechsler Preschool and Primary Scale of Intelligence (WPPSI)	1331	603	728	0,144706686	China
Liu, JH; Lynn, R	2011	Full scale IQ measured by the The Chinese version of the Wechsler Preschool and Primary Scale of Intelligence (WPPSI)	1331	603	728	0,184181793	China
Calvin, CM; Fernandes, C; Smith, P; Visscher, PM; Deary, IJ	2010	IQ: Verbal Cognitive ability measured by the Cognitive Abilities Test—Version 3 (CAT3)	178599	89545	89054	-0,193510003	UK
Calvin, CM; Fernandes, C; Smith, P; Visscher, PM; Deary, IJ	2010	IQ: Quantitative Cognitive ability measured by the Cognitive Abilities Test—Version 3 (CAT3)	178599	89545	89054	0,119945196	UK
Calvin, CM; Fernandes, C; Smith, P; Visscher, PM; Deary, IJ	2010	IQ: Non-verbal Cognitive ability measured by the Cognitive Abilities Test—Version 3 (CAT3)	178599	89545	89054	-0,037354325	UK
Ade, A; Gupta, SS; Maliye, C; Deshmukh, PR; Garg, BS	2010	IQ assessed by Stanford Binet test	80	49	31	0,232969641	

Appendix 4.1.3: (basic) language skills

First author	Year	Task	N total	N girls	N boys	Calculated_D	Country

Torppa. M; Vasalampi. K; Eklund. K; Sulkunen. S; Niemi. P	2020	Reading comprehension - PISA reading link items	1358	699	659	-0,361288328	Finland
Torppa. M; Vasalampi. K; Eklund. K; Sulkunen. S; Niemi. P	2020	Reading fluency	1358	715	697	-0,589265826	Finland
Riso. EM; Magi. K; Vaiksaar. S; Toplaan. L; Jurimae. J	2019	Language and cognitive devolpment (progressive matrix) - modified Boehm Test of Basic Concepts. 3th ed (Boehm-30)	256	124	132	-0,102037245	Estonia
Riso. EM; Magi. K; Vaiksaar. S; Toplaan. L; Jurimae. J	2019	Language and cognitive devolpment (progressive matrix) - modified Boehm Test of Basic Concepts. 3th ed (Boehm-30)	256	124	132	-0,21641235	Estonia
Riso. EM; Magi. K; Vaiksaar. S; Toplaan. L; Jurimae. J	2019	Language and cognitive devolpment (progressive matrix) - modified Boehm Test of Basic Concepts. 3th ed (Boehm-30)	256	124	132	-0,022423299	Estonia
Jang. BG; Ryoo. JH	2019	Reading comprehension (literal/factual comphrehension) - the Noh Reading Inventory (NRI)	585	313	272	-1,712134678	South Korea
Jang. BG; Ryoo. JH	2019	Reading comprehension (inferential comprehension) - the Noh Reading Inventory (NRI)	585	313	272	-1,906309516	South Korea
Jang. BG; Ryoo. JH	2019	Reading comprehension (critical comprehension)- the Noh Reading Inventory (NRI)	585	313	272	-1,773295149	South Korea
Memisevic. H; Malec. D; Biscevic. I; Pasalic. A	2019	Reading skills (grade 2) - multiple tasks together	70	34	36	-0,439510178	Bosnia and Herzegovenia
Memisevic. H; Malec. D; Biscevic. I; Pasalic. A	2019	Reading skills (grade 3) - multiple tasks together	70	33	37	-0,741427397	Bosnia and Herzegovenia
Torppa. M; Eklund. K; Sulkunen. S; Niemi. P; Ahonen. T	2018	PISA Reading composite	1375	707	668	-0,502676326	Finland
Torppa. M; Eklund. K; Sulkunen. S; Niemi. P; Ahonen. T	2018	PISA - interpret	1375	707	668	-0,284888614	Finland

Torppa. M; Eklund. K; Sulkunen. S; Niemi. P; Ahonen. T	2018	PISA - evaluate	1375	707	668	-0,588619466	Finland
Torppa. M; Eklund. K; Sulkunen. S; Niemi. P; Ahonen. T	2018	PISA - retrieve	1375	707	668	-0,273877547	Finland
Torppa. M; Eklund. K; Sulkunen. S; Niemi. P; Ahonen. T	2018	PISA - Multiple choice	1375	707	668	-0,306787511	Finland
Torppa. M; Eklund. K; Sulkunen. S; Niemi. P; Ahonen. T	2018	PISA - written response	1375	707	668	-0,493690487	Finland
Torppa. M; Eklund. K; Sulkunen. S; Niemi. P; Ahonen. T	2018	Reading Fluency	1375	707	668	-0,602686181	Finland
Torppa. M; Eklund. K; Sulkunen. S; Niemi. P; Ahonen. T	2018	Reading Fluency - error search	1375	707	668	-0,614595535	Finland
Torppa. M; Eklund. K; Sulkunen. S; Niemi. P; Ahonen. T	2018	Reading Fluency - word chains	1375	707	668	-0,825256762	Finland
Torppa. M; Eklund. K; Sulkunen. S; Niemi. P; Ahonen. T	2018	Reading Fluency - sentence reading	1375	707	668	-0,613440365	Finland
Salihu. L; Aro. M; Rasanen. P	2018	Reading comprehension - reading 1	233	101	132	-0,135833613	Kosovo
Duncan. LG; McGeown. SP; Griffiths. YM; Stothard. SE; Dobai. A	2016	Early adolescence. Reading comprehension	211	122	89	-0,120321627	United Kingdom
Duncan. LG; McGeown. SP; Griffiths. YM; Stothard. SE; Dobai. A	2016	Early adolescence. Word identification - SWRT	211	122	89	0,014157875	United Kingdom

Duncan. LG; McGeown. SP; Griffiths. YM; Stothard. SE; Dobai. A	2016	Early adolescence. Reading fluency	211	122	89	-0,152787113	United Kingdom
Duncan. LG; McGeown. SP; Griffiths. YM; Stothard. SE; Dobai. A	2016	Middle adolescence. Reading comprehension	101	51	50	-0,146078424	United Kingdom
Duncan. LG; McGeown. SP; Griffiths. YM; Stothard. SE; Dobai. A	2016	Middle adolescence. Word identification - SWRT	101	51	50	0,297856486	United Kingdom
Duncan. LG; McGeown. SP; Griffiths. YM; Stothard. SE; Dobai. A	2016	Middle adolescence. Reading fluency	101	51	50	-0,11291425	United Kingdom
Dennaoui. K; Nicholls. RJ; O'Connor. M; Tarasuik. J; Kvalsvig. A; Goldfeld. S	2016	Academic Rating Scale (ARS) language and literacy scores	77	38	39	-0,476532966	Australia
Völkel. G; Seabi. J; Cockcroft. K; Goldschagg. P	2016	Readingcomprehension - Suffolk Reading Scale 2 (SRS2)	692	338	332	-0,143851153	South-Africa
Ozturk. E	2014	Reading comprehension - oral reading task	384	178	206	-0,245746664	Turkey
Smith. JK; Smith. LF; Gilmore. A; Jameson. M	2012	Year 4, reading achievement - NEMP program	480	230	250	-0,189092239	New Zealand
Smith. JK; Smith. LF; Gilmore. A; Jameson. M	2012	Year 8, reading achievement - NEMP program	480	230	250	-0,298034958	New Zealand
Bourke. L; Adams. AM	2012	Expressive language - the expressive scale of the Reynell Developmental Languge Scales	67	36	31	-0,532653494	United Kingdom
Bourke. L; Adams. AM	2012	Verbal comprehension - the comprehension scale of the Reynell Developmental Language Scales	67	36	31	-0,620280189	United Kingdom
Huestegge. L; Heim. S; Zettelmeyer. E; Lange-Kuttner. C	2012	Reading accuracy - The Neale Analysis of Reading Ability NARA II	36	18	18	1,42693538	United Kingdom
Huestegge. L; Heim. S; Zettelmeyer. E; Lange-Kuttner. C	2012	Reading comprehension - The Neale Analysis of Reading Ability NARA II	36	18	18	1,279204298	United Kingdom

Reynolds. ME; Fish. M	2010	Reading ability - The Group Reading Test 11 6-14	232	115	117	-0,329695348	United Nations of America

Appendix 4.2.1: motivation

First author	**Year**	**Task**	**N total**	**N girls**	**N boys**	**Calculated_D**	**Country**
Brody. DL; Scheiner. EY; Ben Ari. MD; Tzadok. Y; van der Aalsvoort. GM; Lepola. J	2020	Task orientation: questionnaires filled out by kindergarten teachers	115	56	59	-0,252832602	Israel
Tian. Y; Fang. Y; Li. J	2018	Academic motivation scale: intrinsic motivation	569	324	245	0,31896287	China
Ishihara. T; Morita. N; Nakajima. T; Okita. K; Sagawa. M; Yamatsu. K	2018	SFAM: self-fulfillment achievement motivation	325	153	172	-0,123597032	United States
Ishihara. T; Morita. N; Nakajima. T; Okita. K; Sagawa. M; Yamatsu. K	2018	CAM: competitive achievement motivation	325	153	172	0,462000179	United States
Vantieghem. W; Van Houtte. M	2018	Academic Self-Regulation Scale: study motivation Autonomous Motivation	6380	2948	3432	-0,127820626	Belgium
Vantieghem. W; Van Houtte. M	2018	Academic Self-Regulation Scale: study motivation Controlled motivation	6380	2948	3432	0,051800908	Belgium
De Smedt. F; Merchie. E; Barendse. M; Rosseel. Y; De Naeghel. J; Van Keer. H	2018	Autonomous writing motivation	1577	766	811	-0,624847362	Belgium
De Smedt. F; Merchie. E; Barendse. M; Rosseel. Y; De Naeghel. J; Van Keer. H	2018	Controlled writing motivation	1577	766	811	0,254221769	Belgium
Brandenberger. CC; Hagenauer. G; Hascher. T	2018	Intrinsic academic motivation	348	179	169	0,413591239	Switzerland
Brandenberger. CC; Hagenauer. G; Hascher. T	2018	Introjected academic motivation	348	179	169	0,276254134	Switzerland

Brandenberger. CC; Hagenauer. G; Hascher. T	2018	External academic motivation	348	179	169	1,390265611	Switzerland
Brandenberger. CC; Hagenauer. G; Hascher. T	2018	Identified academic motivation	348	179	169	0,102250138	Switzerland
Lee. E	2017	Science intrinsic motivation	745	377	368	0,743179782	South Korea
Lee. E	2017	Science Self-determination motivation	745	377	368	0,400615515	South Korea
Lee. E	2017	Technology intrinsic motivation	745	377	368	0,36176454	South Korea
Lee. E	2017	Technology Self-determination motivation	745	377	368	0,143992454	South Korea
Pitsia. V; Biggart. A; Karakolidis. A	2017	Intrinsic mathemetics motivation	5125			0,288999063	Greece
Pitsia. V; Biggart. A; Karakolidis. A	2017	Instrumental mathematics motivation	5125			0,181759827	Greece
King. RB	2016	Mastery-approach motivation	848	485	363	-0,230373717	Philippines
King. RB	2016	Performance-approach motivation	848	485	363	0,020442682	Philippines
Sedgewick. F; Hill. V; Yates. R; Pickering. L; Pellicano. E	2016	Social Motivation	23	13	10	-0,965745259	United Kingdom
Bugler. M; McGeown. S; St Clair-Thompson. H	2016	Adaptive Cognition	253	110	143	-0,458131473	United Kingdom
Bugler. M; McGeown. S; St Clair-Thompson. H	2016	Adaptive behavior	253	110	143	-0,596218779	United Kingdom
Bugler. M; McGeown. S; St Clair-Thompson. H	2016	Maladaptive cognition	253	110	143	0,030212397	United Kingdom
Bugler. M; McGeown. S; St Clair-Thompson. H	2016	Maladaptive behavior	253	110	143	0,578606655	United Kingdom
Bugler. M; McGeown. S; St Clair-Thompson. H	2016	Adaptive Cognition	324	162	162	0,01849876	United Kingdom
Bugler. M; McGeown. S; St Clair-Thompson. H	2016	Adaptive behavior	324	162	162	-0,085980793	United Kingdom
Bugler. M; McGeown. S; St Clair-Thompson. H	2016	Maladaptive cognition	324	162	162	-0,603793271	United Kingdom

Bugler. M; McGeown. S; St Clair-Thompson. H	2016	Maladaptive behavior	324	162	162	-0,215005298	United Kingdom
Bugler. M; McGeown. S; St Clair-Thompson. H	2016	Adaptive Cognition	240	105	135	-0,295881738	United Kingdom
Bugler. M; McGeown. S; St Clair-Thompson. H	2016	Adaptive behavior	240	105	135	-0,082598558	United Kingdom
Bugler. M; McGeown. S; St Clair-Thompson. H	2016	Maladaptive cognition	240	105	135	-0,342267881	United Kingdom
Bugler. M; McGeown. S; St Clair-Thompson. H	2016	Maladaptive behavior	240	105	135	0,123360048	United Kingdom
Hadjichambis. AC; Georgiou. Y; Paraskeva-Hadjichambi. D; Kyza. EA; Mappouras. D	2016	Motivation in context of learning biology	6465	3260	3205	-0,189018693	Cyprus
Wolter. I; Braun. E; Hannover. B	2015	Reading motivation	135	70	65	-0,322074597	Germany
Bugler. M; McGeown. SP; St Clair-Thompson. H	2015	Self-Belief	750	366	384	-0,12156669	United Kingdom
Bugler. M; McGeown. SP; St Clair-Thompson. H	2015	Valuing	750	366	384	-0,211588451	United Kingdom
Bugler. M; McGeown. SP; St Clair-Thompson. H	2015	Learning focus	750	366	384	-0,226303209	United Kingdom
Bugler. M; McGeown. SP; St Clair-Thompson. H	2015	Planning	750	366	384	-0,068345454	United Kingdom
Bugler. M; McGeown. SP; St Clair-Thompson. H	2015	Task management	750	366	384	-0,240288846	United Kingdom
Bugler. M; McGeown. SP; St Clair-Thompson. H	2015	Persistence	750	366	384	-0,202989113	United Kingdom
Bugler. M; McGeown. SP; St Clair-Thompson. H	2015	Anxiety	750	366	384	-0,512751429	United Kingdom
Bugler. M; McGeown. SP; St Clair-Thompson. H	2015	Failure Avoidance	750	366	384	0,130600121	United Kingdom

Bugler. M; McGeown. SP; St Clair-Thompson. H	2015	Uncertain Control	750	366	384	-0,257752474	United Kingdom
Bugler. M; McGeown. SP; St Clair-Thompson. H	2015	Self-sabotage	750	366	384	0,208110057	United Kingdom
Bugler. M; McGeown. SP; St Clair-Thompson. H	2015	Disengagement	750	366	384	0,072878944	United Kingdom
Bugler. M; McGeown. SP; St Clair-Thompson. H	2015	Oppositional classroom behavior	750	366	384	0,125261934	United Kingdom
Bugler. M; McGeown. SP; St Clair-Thompson. H	2015	Cognitive problems/inattention	750	366	384	0,209756971	United Kingdom
Bugler. M; McGeown. SP; St Clair-Thompson. H	2015	Hyperactivity	750	366	384	0,40932454	United Kingdom
Arbabi. T; Vollmer. C; Dorfler. T; Randler. C	2015	SELLMO: motivation: Learning objectives	1120	536	584	-0,104967957	Germany
Arbabi. T; Vollmer. C; Dorfler. T; Randler. C	2015	SELLMO: Motivation: Approach performance objectives	1120	536	584	0,095380906	Germany
Schwabe. F; McElvany. N; Trendtel. M	2015	Reading motivation	4000	1980	2020	-2,260290562	Germany
Schwabe. F; McElvany. N; Trendtel. M	2015	Reading motivation	4979	2435	2544	-5,040259937	Germany
McGeown. SP; Duncan. LG; Griffiths. YM; Stothard. SE	2015	Reading motivation	312			-0,696852411	United Kingdom
McGeown. SP	2015	Reading Motivation (curiosity)	223	126	97	-0,425022849	United Kingdom
McGeown. SP	2015	Reading Motivation (challenge)	223	126	97	-0,179882692	United Kingdom
McGeown. SP	2015	Reading Motivation (involvement)	223	126	97	-0,412886469	United Kingdom
McGeown. S; Goodwin. H; Henderson. N; Wright. P	2012	Reading motivation: intrinsic	182	84	98	-0,463777242	United Kingdom
McGeown. S; Goodwin. H; Henderson. N; Wright. P	2012	Reading motivation: extrinsic	182	84	98	-0,173393533	United Kingdom
Kim. JI; Chung. H	2012	Motivation to learn mathemetics: mastery approach	187	86	105	0,135214853	Korea
Kim. JI; Chung. H	2012	Motivation to learn mathemetics: performance approach	187	86	105	0,115308305	Korea

Kim. JI; Chung. H	2012	Motivation to learn mathematics: intrinsic motivation	187	86	105	0,327364882	Korea
Cleary. TJ; Chen. PP	2009	Task interest	880	449	431	-0,20820321	United States

Appendix 4.2.2: Risk seeking/taking

First author	Year	Task	N total	N girls	N boys	Calculated_D	Country
Popovac. M	2020	Child and adolescent online security (CHAOS) scale	1184	639	545	-0,269760116	South Africa
Rebellon. CJ	2019	multi-wave longitudinal study of delinquency and rule-violating behavior	661	388	273	0,320617899	USA
Harakeh. Z	2019	Balloon Analogue Risk Task (BART)	35	18	16	-0,045888409	Netherlands
Keyzers. A	2019	Strengths and Difficulties Questionnaire (SDQ; Goodman. 1997)	520	229	290	0,205608971	USA
Villarreal. DL	2018	Risky Behavior Questionnaire: Sexual behavior	659	343	316	0,077613772	USA
Villarreal. DL	2018	Risky Behavior Questionnaire: Substance use	659	343	316	0,027620285	USA
Ewing. SWF	2018	Current Sexual Activity and Risky Sexual Behavior: Frequency of sexual intercourse	169	54	115	0,304029802	USA
Ewing. SWF	2018	Current Sexual Activity and Risky Sexual Behavior: Frequency of condom use	169	54	115	0,157641174	USA
Arbel. R	2018	Daily risky behaviors questionnaire	103	46	57	0,117639222	USA
de Boer. A	2017	Balloon Analogue Risk Task (BART)	269	125	144	2,795449917	Netherlands
de Boer. A	2017	Balloon Analogue Risk Task (BART)	65	31	34	0,037972613	Netherlands
Morrongiello. BA	2017	Obstacle course	120	60	60	-0,110547443	Canada
Morrongiello. BA	2017	Photo sort task	120	60	60	0,270498198	Canada
Schmidt. NM	2017	Risky behavior index	879	431	448	0,09221835	USA
Sasson. H	2016	Risky online behaviors	495	229	266	0,371888465	Israel

Rovis. D	2015	Engagement in sacral forms of risk behavior: antisocial behavior, gambling, and heavy drinking	1137	568	569	0,618202678	Croatia
Wang. B	2015	Sexual behavior	770	433	337	0,071090696	Bahamas
Wang. B	2015	Drug use	770	433	337	0	Bahamas
Sychareun. V	2013	Age at first sexual intercourse	483	238	245	0,704251889	Laos
Sychareun. V	2013	Number of lifetime sexual partners	483	238	245	0,790190518	Laos
Sychareun. V	2013	Number of sexual partner last 6 mo	483	238	245	0,47675868	Laos
Morrongiello. BA	2013	Intention to copy risk behavior (video)	82	39	43	0,21913902	Canada
Morrongiello. BA	2013	Intention to copy risk behavior (video)	75	35	40	0,396601809	Canada
Daughters. SB	2013	Balloon Analogue Risk Task (BART)	132	73	59	2,367918774	USA
Lasenby-Lessard. J	2013	Balance beam task	53	29	24	0,863339634	Canada
Lasenby-Lessard. J	2013	Balance beam task	49	26	23	0,066108216	Canada
Stevens. E	2013	Bicycle safety measures: Stopping	52	26	26	-0,176974322	USA
Stevens. E	2013	Bicycle safety measures: Waiting	52	26	26	-0,549468704	USA
Stevens. E	2013	Bicycle safety measures: Gap size	52	26	26	-0,062277399	USA
Stevens. E	2013	Bicycle safety measures: Timing of entry	52	26	26	-0,622032074	USA
Stevens. E	2013	Bicycle safety measures: Time to spare	52	26	26	0,718224149	USA
Stevens. E	2013	Bicycle safety measures: Stopping	57	26	31	0,246210114	USA
Stevens. E	2013	Bicycle safety measures: Waiting	57	26	31	0,119434096	USA
Stevens. E	2013	Bicycle safety measures: Gap size	57	26	31	0,158800359	USA
Stevens. E	2013	Bicycle safety measures: Timing of entry	57	26	31	-0,574602178	USA
Stevens. E	2013	Bicycle safety measures: Time to spare	57	26	31	0,814122512	USA
Vermeersch. H	2013	Non-aggressive risk taking	599	298	301	0,55878601	Belgium
Vermeersch. H	2013	Aggressive risk taking	599	298	301	0,822157754	Belgium
Auerbach. RP	2012	Risky Behvaior Questionnaire-Adolescents	151	83	68	-0,45913015	Canada
Morrongiello. BA	2012	Playground risk taking task	70	38	32	1,346765203	Canada
Geckil. E	2011	Health Risk Behaviors Scale	1361	655	706	0,362236725	Turkey
Williams. LR	2010	Balloon Analogue Risk Task (BART)	137	72	65	0,297127393	USA

Granie	2009	Road User's Behaviour Perception Scales	278	148	130	0,745094271

Appendix 4.2.3: Confidence/self-esteem

First author	Year	Task	N total	N girls	N boys	Calculated_D	Country
Metsapelto et al.	2020	Rosenberg Self-Esteem Scale	557			0,280196259	Finland
de la Garza et al.	2019	Rosenberg Self-Esteem Scale	350	165	185	0,223771633	Mexico
Xiang et al.	2019	T1: Rosenberg Self-Esteem Scale	246			0,136238009	China
Xiang et al.	2019	T2: Rosenberg Self-Esteem Scale	248	132	116	-0,095335634	China
Xiang et al.	2019	T3: Rosenberg Self-Esteem Scale	243			-0,128272849	China
Alm & Laftman	2018	Stockholm School Survey	321777	16280	15897	0,791796686	Sweden
Liu et al.	2018	Rosenberg Self-Esteem Scale	612	358	254	0,035414519	China
Chen et al.	2018	Wave 1: Rosenberg Self-Esteem Scale	276	119	157	-0,147351745	China
Chen et al.	2018	Wave 2: Rosenberg Self-Esteem Scale	276	119	157	-0,135349941	China
Duraku & Kelmendi	2018	Rosenberg Self-Esteem Scale	200	97	103	0,075679611	Kosovo
Federicova et al.	2018	Self-Esteem Questionnaire based on TIMSS & CLoSE 4th Grade	2945	1422	1523	0,122207735	Czech Republic
Federicova et al.	2018	Self-Esteem Questionnaire based on TIMSS & CLoSE 5th Grade	2945	1422	1523	0,310544379	Czech Republic
Hernandez et al.	2017	General Self-Esteem scale of the Self-Description Questionnaire II-Short 5th grade	674	337	337	-0,016541924	US (CA)
Hernandez et al.	2017	General Self-Esteem scale of the Self-Description Questionnaire II-Short 7th grade	674	337	337	-0,08615569	US (CA)
Hernandez et al.	2017	General Self-Esteem scale of the Self-Description Questionnaire II-Short 9th grade	674	337	337	0,086874449	US (CA)
Ja & Jose.	2017	Ryff Well-Being Scale & Rosenberg Self-Esteem Scale	1996	1038	958	0,136811691	New Zealand

Aanesen et al.	2017	T1: Rosenberg Self-Esteem Scale	751	383	398	0,498158403	Norway
Aanesen et al.	2017	T2: Rosenberg Self-Esteem Scale	751	383	398	0,877877615	Norway
Coelho et al.	2017	T1: Self-Description Questionnaire I (SDQ-I) General Self scale	1147	524	623	0,018563358	Portugal
Coelho et al.	2017	T2: Self-Description Questionnaire I (SDQ-I) General Self scale	1147	524	623	-0,053860354	Portugal
Coelho et al.	2017	T3: Self-Description Questionnaire I (SDQ-I) General Self scale	1147	524	623	-0,095134188	Portugal
Coelho et al.	2017	T4: Self-Description Questionnaire I (SDQ-I) General Self scale	1147	524	623	-0,057413733	Portugal
Zeng et al.	2017	Rosenberg Self-Esteem Scale	11819	5674	6145	0,109201304	China
Choi & Choi	2016	5 item self esteem measure (USA)	1002	550	452	0,232819076	USA
Choi & Choi	2016	5 item self esteem measure (SK)	3933	1929	2004	0,121629219	South Korea
Malik & Kaiser	2016	Rosenberg Self-Esteem Scale	400	200	200	0,242377709	India
Ganley & Lubienski	2016	T1: Self-Descriptive Questionnaire (Math confidence)	7040	3580	3460	0,322891426	USA
Ganley & Lubienski	2016	T2: Self-Descriptive Questionnaire (Math confidence)	7040	3580	3460	0,290930359	USA
Ganley & Lubienski	2016	T3: Self-Descriptive Questionnaire (Math confidence)	7040	3580	3460	0,148817988	USA
Mayer-Brown et al.	2016	Harter Self-Perception Profile for Children	179	97	82	-0,116112458	USA
Moksnes & Lazarewicz	2016	Rosenberg Self-Esteem Scale	1237	634	603	0,888176118	Norway
Wu et al.	2015	T1: Children's Self-Esteem Scale	816	394	422	-0,118766534	China
Wu et al.	2015	T2: Children's Self-Esteem Scale	816	394	422	-0,035796245	China
Wu et al.	2015	T3: Children's Self-Esteem Scale	816	394	422	0,103549081	China
Schone et al.	2015	Selbstwertinventar für Kinder und Jugendliche SEKJ (academic Contingent Self-Esteem scale)	338	163	175	-0,121855467	Germany
Schone et al.	2015	Selbstwertinventar für Kinder und Jugendliche SEKJ (Self-Esteem scale)	338	163	175	0,257228234	Germany

Schone et al.	2015	Selbstwertinventar für Kinder und Jugendliche SEKJ (academic Contingent Self-Esteem scale)	558	275	283	-0,196971884	Germany
Schone et al.	2015	Selbstwertinventar für Kinder und Jugendliche SEKJ (Self-Esteem scale)	558	275	283	0,328169023	Germany
Schone et al.	2015	Selbstwertinventar für Kinder und Jugendliche SEKJ (academic Contingent Self-Esteem scale)	990	504	486	-0,411950178	Germany
Schone et al.	2015	Selbstwertinventar für Kinder und Jugendliche SEKJ (Self-Esteem scale)	990	504	486	0,512726082	Germany
McGeown et al.	2015	reading confidence items from Progress in International Reading Literacy Study (PIRLS)	203	100	103	-0,353330153	England
Schmidt et al.	2015	W2: Rosenberg Self-Esteem Scale	428	198	230	0,231671298	Switzerland
Schmidt et al.	2015	W3: Rosenberg Self-Esteem Scale	428	198	230	0,218651967	Switzerland
McKay et al.	2014	Rosenberg Self-Esteem Scale	610	372	238	0,542978491	Northern Ireland
Wood et al.	2014	Rosenberg Self-Esteem Scale	25	13	12	-0,395896288	UK
Tan & Tan	2014	Rosenberg Self-Esteem Scale	298	155	143	0,37583824	Singapore
Moksnes & Espnes	2013	Rosenberg Self-Esteem Scale	1289	636	603	0,904258829	Norway
Witherspoon et al.	2013	Rosenberg Self-Esteem Scale	235	116	119	0,101258337	USA
Ramiro et al.	2013	Rosenberg Self-Esteem Scale	1005	529	470	0,116369573	Spain
Lo Cascio. V; Guzzo. G; Pace. F; Pace. U	2013	Rosenberg Self-Esteem Scale	350	149	201	0,53979369	Italy
Zeiders et al.	2013	T1: Rosenberg Self-Esteem Scale	323	160	163	0,200940284	USA
Wang et al.	2013	Rosenberg Self-Esteem Scale	6045	3572	2473	0,264845191	Taiwan
Richardson et al.	2013	Rosenberg Self-Esteem Scale	1267	718	549	0,524232367	Canada
Soler et al.	2012	Rosenberg Self-Esteem Scale	712	458	254	0,871665539	Spain
Soler et al.	2012	Rosenberg Self-Esteem Scale	712	458	254	0,541619167	Spain
Makinen et al.	2012	Rosenberg Self-Esteem Scale	1343	650	693	0,859398243	Finland
Litwack et al.	2012	Rosenberg Self-Esteem Scale	245	142	103	0,035509229	USA
Sahranavard et al.	2012	Coopersmith Self-Esteem Inventory (CSEI)	680	364	316	-0,491767966	Iran
McKay et al.	2012	Rosenberg Self-Esteem Scale	4088	2062	2026	0,668999242	Northern Ireland

Doumen et al.	2011	Pictorial Self-Evaluation Scale (PSES) for Young Children	139	69	70	-0,467941676	Belgium
Doumen et al.	2011	General Self-Concept Scale (SDQ-I)	139	69	70	0,072907024	Belgium
Doumen et al.	2011	Puppet Interview (Cassidy. 1988)	139	69	70	-0,39520482	Belgium
Cheung & Yeung	2011	Pier-Harris Inventory (academic self-esteem)	566	248	318	-0,149267343	China (Hong Kong)
van den Berg et al.	2010	Rosenberg Self-Esteem Scale	4734	2357	2377	0,498302967	USA (MN)
Vlachioti et al.	2010	Culture-Free Self-Esteem Inventory for Children (CFSEI-2)	136	69	67	0,072575876	Greece

Appendix 4.2.4: Emotional intelligence

First author	**Year**	**Task**	**N total**	**N girls**	**N boys**	**Calculated_D**	**Country**
Herrera. L.	2020	EI dimension: intrapersonal (BarOn Emotional Quotient Inventory)	407	215	192	0,033736301	Spain
Herrera. L.	2020	EI dimension: interpersonal (BarOn Emotional Quotient Inventory)	407	215	192	-0,408663285	Spain
Herrera. L.	2020	EI dimension: stress management (BarOn Emotional Quotient Inventory)	407	215	192	0,528560512	Spain
Herrera. L.	2020	EI dimension: adaptdability (BarOn Emotional Quotient Inventory)	407	215	192	0,393150843	Spain
Lopez-Martinez. P.	2019	EI: percieved emotional clarity measured by The Perceived Emotional Intelligence Scale-24 (Trait Meta-Mood Scale-24)	1304	693	611	-0,011812735	Spain
Lopez-Martinez. P.	2019	EI: perceived emotional attention measured by The Perceived Emotional Intelligence Scale-24 (Trait Meta-Mood Scale-24)	1304	693	611	-0,333061163	Spain

Lopez-Martinez. P.	2019	EI: percieved emotional repair measured by The Perceived Emotional Intelligence Scale-24 (Trait Meta-Mood Scale-24)	1304	693	611	0,010884152	Spain
Gugliandolo . MC.	2019	trait EI measured by the Trait Emotional Intelligence Questionnaire-Child Form (TEIQue-CF; Mavroveli et al.. 2008)	91	40	51	-0,271732397	Italy
Gugliandolo . MC.	2019	trait EI measured by the Trait Emotional Intelligence Questionnaire-Child Form (TEIQue-CF; Mavroveli et al.. 2008)	111	50	61	-0,054377908	Italy
Gugliandolo . MC.	2019	trait EI measured by the Trait Emotional Intelligence Questionnaire-Child Form (TEIQue-CF; Mavroveli et al.. 2008)	98	47	51	-0,233308786	Italy
Amado-Alonso. D.	2019	Emotional Quotient: as a whole measured by Emotional Quotient Inventory: Young Version (EQ-i: YV)	940	432	508	-0,142335212	Spain
Amado-Alonso. D.	2019	Emotional Quotient: Intrapersonal measured by Emotional Quotient Inventory: Young Version (EQ-i: YV)	940	432	508	-0,106036805	Spain
Amado-Alonso. D.	2019	Emotional Quotient: Interpersonal measured by Emotional Quotient Inventory: Young Version (EQ-i: YV)	940	432	508	-0,30817732	Spain
Amado-Alonso. D.	2019	Emotional Quotient: Coping with stress measured by Emotional Quotient Inventory: Young Version (EQ-i: YV)	940	432	508	0,073890065	Spain
Amado-Alonso. D.	2019	Emotional Quotient: Adaptability measured by Emotional Quotient Inventory: Young Version (EQ-i: YV)&2	940	432	508	0,103952147	Spain
Amado-Alonso. D.	2019	Emotional Quotient: Mood State measured by Emotional Quotient Inventory: Young Version (EQ-i: YV)	940	432	508	-0,232717174	Spain
Salavera. C.	2019	EI: well-being	1358	667	691	0,234295686	Spain
Salavera. C.	2019	Ei: self-controll skills	1358	667	691	0,621360546	Spain

Salavera. C.	2019	EI: emotional skills	1358	667	691	-0,221043639	Spain
Salavera. C.	2019	EI: social skills	1358	667	691	0,00483957	Spain
Gomez-Baya. D.	2018	Time 1: EI: emotional attention measured byt he Spanish adaptation of the Trait Meta-Mood Scale (TMMS; Salovey et al.. 1995; Fernandez-Berrocal et al.. 2004)	880	461	419	-0,517384176	Spain
Gomez-Baya. D.	2018	Time 1: EI: emotional clarity measured byt he Spanish adaptation of the Trait Meta-Mood Scale (TMMS; Salovey et al.. 1995; Fernandez-Berrocal et al.. 2004)	880	461	419	0,055375	Spain
Gomez-Baya. D.	2018	Time 1: EI: emotional repair measured byt he Spanish adaptation of the Trait Meta-Mood Scale (TMMS; Salovey et al.. 1995; Fernandez-Berrocal et al.. 2004)	880	461	419	0,2218882	Spain
Gomez-Baya. D.	2018	Time 2: EI: emotional attention measured byt he Spanish adaptation of the Trait Meta-Mood Scale (TMMS; Salovey et al.. 1995; Fernandez-Berrocal et al.. 2004)	880	461	419	-0,415462137	Spain
Gomez-Baya. D.	2018	Time 2: EI: emotional clarity measured byt he Spanish adaptation of the Trait Meta-Mood Scale (TMMS; Salovey et al.. 1995; Fernandez-Berrocal et al.. 2004)	880	461	419	0,2746026	Spain
Gomez-Baya. D.	2018	Time 2: EI: emotional repair measured byt he Spanish adaptation of the Trait Meta-Mood Scale (TMMS; Salovey et al.. 1995; Fernandez-Berrocal et al.. 2004)	880	461	419	0,323989541	Spain
Rey. L.	2018	EI as whole measured by the Wong and Law Emotional Intelligence Scale' (WLEIS)	1645	832	813	0,205000069	Spain
Rey. L.	2018	EI: Self-emotion appraisal measured by the Wong and Law Emotional Intelligence Scale' (WLEIS)	1645	832	813	0,3626093	Spain
Rey. L.	2018	EI: Other-emotion appraisal measured by the Wong and Law Emotional Intelligence Scale' (WLEIS)	1645	832	813	-0,306367153	Spain
Rey. L.	2018	EI: Use of emotions measured by the Wong and Law Emotional Intelligence Scale' (WLEIS)	1645	832	813	0,138562891	Spain

Rey. L.	2018	EI: Regulation of emotions measured by the Wong and Law Emotional Intelligence Scale' (WLEIS)	1645	832	813	0,441942256	Spain
Peachey. AA.	2017	EI measured by TEIQue-CSF.	235	120	115	-0,193997049	
Esnaola. I.	2017	Grade 7: Time 1: EI: Intrapersonal measured by [EQ-i: YV(s), Bar-On & Parker, 2000, translated by Caraballo & Villegas, 2001].	83	37	46	-0,183640606	Spain
Esnaola. I.	2017	Grade 7: Time 1: EI: Interpersonal	83	37	46	-0,877323328	Spain
Esnaola. I.	2017	Grade 7: Time 1: EI: Stress management	83	37	46	-0,845409652	Spain
Esnaola. I.	2017	Grade 7: Time 1: EI: Adaptability	83	37	46	0,365196538	Spain
Esnaola. I.	2017	Grade 8: Time 1: EI: Intrapersonal	81	34	47	0,047711731	Spain
Esnaola. I.	2017	Grade 8: Time 1: EI: Interpersonal	81	34	47	-0,432406575	Spain
Esnaola. I.	2017	Grade 8: Time 1: EI: Stress management	81	34	47	-0,122960576	Spain
Esnaola. I.	2017	Grade 8: Time 1: EI: Adaptability	81	34	47	0,145569953	Spain
Esnaola. I.	2017	Grade 9: Time 1: EI: Intrapersonal	88	44	44	0,379288259	Spain
Esnaola. I.	2017	Grade 9: Time 1: EI: Interpersonal	88	44	44	-0,95728563	Spain
Esnaola. I.	2017	Grade 9: Time 1: EI: Stress management	88	44	44	0,388755676	Spain
Esnaola. I.	2017	Grade 9: Time 1: EI: Adaptability	88	44	44	-0,140760969	Spain
Esnaola. I.	2017	Grade 10: Time 1: EI: Intrapersonal	75	46	29	-0,655343758	Spain
Esnaola. I.	2017	Grade 10: Time 1: EI: Interpersonal	75	46	29	-0,440650563	Spain
Esnaola. I.	2017	Grade 10: Time 1: EI: Stress management	75	46	29	0,191764465	Spain
Esnaola. I.	2017	Grade 10: Time 1: EI: Adaptability	75	46	29	-0,269652137	Spain
Esnaola. I.	2017	Grade 11: Time 1: EI: Intrapersonal	89	49	40	0,12777517	Spain

Esnaola. I.	2017	Grade 11: Time 1: EI: Interpersonal	89	49	40	-0,228500902	Spain
Esnaola. I.	2017	Grade 11: Time 1: EI: Stress management	89	49	40	0,043169796	Spain
Esnaola. I.	2017	Grade 11: Time 1: EI: Adaptability	89	49	40	0,724360358	Spain
Esnaola. I.	2017	Grade 12: Time 1: EI: Intrapersonal	68	48	20	0,007969514	Spain
Esnaola. I.	2017	Grade 12: Time 1: EI: Interpersonal	68	48	20	-1,073587568	Spain
Esnaola. I.	2017	Grade 12: Time 1: EI: Stress management	68	48	20	1,142283755	Spain
Esnaola. I.	2017	Grade 12: Time 1: EI: Adaptability	68	48	20	-0,273179844	Spain
Esnaola. I.	2017	Grade 7: Time 2: EI: Intrapersonal	83	37	46	0,289163374	Spain
Esnaola. I.	2017	Grade 7: Time 2: EI: Interpersonal	83	37	46	-1,331165753	Spain
Esnaola. I.	2017	Grade 7: Time 2: EI: Stress management	83	37	46	-0,667636471	Spain
Esnaola. I.	2017	Grade 7: Time 2: EI: Adaptability	83	37	46	0,255443601	Spain
Esnaola. I.	2017	Grade 8: Time 2: EI: Intrapersonal	81	34	47	0,117845627	Spain
Esnaola. I.	2017	Grade 8: Time 2: EI: Interpersonal	81	34	47	-0,663178101	Spain
Esnaola. I.	2017	Grade 8: Time 2: EI: Stress management	81	34	47	0,159846485	Spain
Esnaola. I.	2017	Grade 8: Time 2: EI: Adaptability	81	34	47	0,012373138	Spain
Esnaola. I.	2017	Grade 9: Time 2: EI: Intrapersonal	88	44	44	-0,018523063	Spain
Esnaola. I.	2017	Grade 9: Time 2: EI: Interpersonal	88	44	44	-0,940833092	Spain
Esnaola. I.	2017	Grade 9: Time 2: EI: Stress management	88	44	44	0,389304464	Spain
Esnaola. I.	2017	Grade 9: Time 2: EI: Adaptability	88	44	44	0,059445647	Spain
Esnaola. I.	2017	Grade 10: Time 2: EI: Intrapersonal	75	46	29	-0,487994824	Spain

Esnaola. I.	2017	Grade 10: Time 2: EI: Interpersonal	75	46	29	-0,593921206	Spain
Esnaola. I.	2017	Grade 10: Time 2: EI: Stress management	75	46	29	0,492409063	Spain
Esnaola. I.	2017	Grade 10: Time 2: EI: Adaptability	75	46	29	-0,009856279	Spain
Esnaola. I.	2017	Grade 11: Time 2: EI: Intrapersonal	89	49	40	0,104385421	Spain
Esnaola. I.	2017	Grade 11: Time 2: EI: Interpersonal	89	49	40	-0,768270517	Spain
Esnaola. I.	2017	Grade 11: Time 2: EI: Stress management	89	49	40	0,350755714	Spain
Esnaola. I.	2017	Grade 11: Time 2: EI: Adaptability	89	49	40	0,573835435	Spain
Esnaola. I.	2017	Grade 12: Time 2: EI: Intrapersonal	68	48	20	0,041494386	Spain
Esnaola. I.	2017	Grade 12: Time 2: EI: Interpersonal	68	48	20	-0,549343897	Spain
Esnaola. I.	2017	Grade 12: Time 2: EI: Stress management	68	48	20	0,994303123	Spain
Esnaola. I.	2017	Grade 12: Time 2: EI: Adaptability	68	48	20	0,109613713	Spain
Gomez-Baya. D.	2017	EI: Time 1: Emotional Attention measured by the Spanish validated version of the Trait Meta-Mood Scale (TMMS; Fernandez-Berrocal, Extremera & Ramos, 2004; Gomez-Baya, 2014; Salovey et al., 1995)	878	342	536	-0,31260157	Spain
Gomez-Baya. D.	2017	EI: Time 1: Emotional Clarity measured by the Spanish validated version of the Trait Meta-Mood Scale (TMMS; Fernandez-Berrocal, Extremera & Ramos, 2004; Gomez-Baya, 2014; Salovey et al., 1995)	878	342	536	0,074847235	Spain
Gomez-Baya. D.	2017	EI: Time 1: Emotional Repair measured by the Spanish validated version of the Trait Meta-Mood Scale (TMMS; Fernandez-Berrocal, Extremera & Ramos, 2004; Gomez-Baya, 2014; Salovey et al., 1995)	878	342	536	0,343806817	Spain

Herrera. L.	2017	EI: total measured by the Emotional Quotient Inventory: Youth Version (EQi: YV, Bar-On & Parker, 2000)	1451	727	724	-0,004597625	Colombia
Herrera. L.	2017	EI: Intrapersonal measured by the Emotional Quotient Inventory: Youth Version (EQi: YV, Bar-On & Parker, 2000)	1451	727	724	0,205131436	Colombia
Herrera. L.	2017	EI: interpersonal measured by the Emotional Quotient Inventory: Youth Version (EQi: YV, Bar-On & Parker, 2000)	1451	727	724	-0,197222814	Colombia
Herrera. L.	2017	EI: Stress Management measured by the Emotional Quotient Inventory: Youth Version (EQi: YV, Bar-On & Parker, 2000)	1451	727	724	0,014730224	Colombia
Herrera. L.	2017	EI: Adaptability measured by the Emotional Quotient Inventory: Youth Version (EQi: YV, Bar-On & Parker, 2000)	1451	727	724	-0,203335884	Colombia
Herrera. L.	2017	EI: General Mood measured by the Emotional Quotient Inventory: Youth Version (EQi: YV, Bar-On & Parker, 2000)	1451	727	724	#VERW!	Colombia
Gomez-Baya. D.	2016	EI: Time 1: Emotional Attention measured by the Trait Meta-Mood Scale	714	362	352	-0,307364242	Spain
Gomez-Baya. D.	2016	EI: Time 1: Emotional Clarity measured by the Trait Meta-Mood Scale	714	362	352	0,079439849	Spain
Gomez-Baya. D.	2016	EI: Time 1: Emotional Repair measured by the Trait Meta-Mood Scale	714	362	352	0,375184372	Spain
Gomez-Baya. D.	2016	EI: Time 2: Emotional Attention measured by the Trait Meta-Mood Scale	714	362	352	-0,400228852	Spain
Gomez-Baya. D.	2016	EI: Time 2: Emotional Clarity measured by the Trait Meta-Mood Scale	714	362	352	0,16833785	Spain
Gomez-Baya. D.	2016	EI: Time 2: Emotional Repair measured by the Trait Meta-Mood Scale	714	362	352	0,286385571	Spain
Moreno-Manso. JM.	2016	EI: Emotional Attention measured by The Spanish version of the Trait Meta-Mood Scale of Mayer,	66	29	37	-0,149591518	Spain

		DiPaolo, and Salovey (1990) (TMMS-24; Fernández-Berrocal, Extremera, and Ramos 2004)					
Moreno-Manso. JM.	2016	EI: Emotional Clarity measured by The Spanish version of the Trait Meta-Mood Scale of Mayer, DiPaolo, and Salovey (1990) (TMMS-24; Fernández-Berrocal, Extremera, and Ramos 2004)	66	29	37	-0,635441177	Spain
Moreno-Manso. JM.	2016	EI: Emotional Repair measured by The Spanish version of the Trait Meta-Mood Scale of Mayer, DiPaolo, and Salovey (1990) (TMMS-24; Fernández-Berrocal, Extremera, and Ramos 2004)	66	29	37	-0,149591518	Spain
Andrei. F.	2015	trait EI measured by the Italian Trait Emotional Intelligence Questionnaire—Child Form (TEIQue-CF; Russo et al., 2012; Mavroveli, Petrides, Shove, & Whitehead, 2008	376	195	181	-0,388420298	Italy
Andrei. F.	2015	trait EI measured by the Italian Trait Emotional Intelligence Questionnaire—Child Form (TEIQue-CF; Russo et al., 2012; Mavroveli, Petrides, Shove, & Whitehead, 2008	202	107	95	-0,306286997	Italy
Gugliandolo . MC.	2015	trait EI: well-being	263	130	133	0,059676044	Italy
Gugliandolo . MC.	2015	trait EI: self-control	263	130	133	0,234771284	Italy
Gugliandolo . MC.	2015	trait EI: emotionality	263	130	133	-0,184439699	Italy
Gugliandolo . MC.	2015	trait EI: sociability	263	130	133	0,136927098	Italy
Gugliandolo . MC.	2015	global trait EI	263	130	133	0,046932722	Italy

Castillo. R.	2013	Cognitive empathy: Perspective-taking measured by The Spanish version (Pérez-Albéniz et al., 2003) of the Interpersonal Reactivity Index (IRI; Davis, 1983)	229	118	111	- 0,335742568	Spain
Castillo. R.	2013	Cognitive empathy: Fantasy measured byThe Spanish version (Pérez-Albéniz et al., 2003) of the Interpersonal Reactivity Index (IRI; Davis, 1983)	229	118	111	- 0,203406898	Spain
Topcu. C.	2012	Cognitive empathy measured by Basic Empathy Scale (BES)	795	455	340	- 0,664996616	Turkey
Naghavi. F.	2012	EI measured by Schutte's Emotional Intelligence Self-measuring Scale (introduced by Schutte and her colleagues in 1998 and Mayer and Salovey's original emotional intelligence model, 1990)	234	118	116	- 3,498527161	Iran
Naghavi. F.	2012	Emotional Intelligence measured by Schutte's Self-measuring Scale (introduced by Schutte and her colleagues in 1998 and Mayer and Salovey's original emotional intelligence model, 1990)	234	118	116	- 3,989714716	Iran
Naghavi. F.	2012	Emotional Regulation measured by Schutte's Emotional Intelligence Self-measuring Scale (introduced by Schutte and her colleagues in 1998 and Mayer and Salovey's original emotional intelligence model, 1990)	234	118	116	- 4,219114352	Iran
Naghavi. F.	2012	Emotional Utllization measured by Schutte's Emotional Intelligence Self-measuring Scale (introduced by Schutte and her colleagues in 1998 and Mayer and Salovey's original emotional intelligence model, 1990)	234	118	116	- 7,308680272	Iran
Hogan. MJ.	2010	E.I: general measured by The Emotional Quotient Inventory: Youth Version (EQ-i:YV) (Bar-On & Parker, 2000a)	192	96	96	0,013115584	Canada
Hogan. MJ.	2010	E.I: intrapersonal measured by The Emotional Quotient Inventory: Youth Version (EQ-i:YV) (Bar-On & Parker, 2000a)	192	96	96	- 0,063005854	Canada

Hogan. MJ.	2010	E.I: interpersonal measured by The Emotional Quotient Inventory: Youth Version (EQ-i:YV) (Bar-On & Parker, 2000a)	192	96	96	-0,564351704	Canada
Hogan. MJ.	2010	E.I: adaptabilitymeasured by The Emotional Quotient Inventory: Youth Version (EQ-i:YV) (Bar-On & Parker, 2000a)	192	96	96	0,499820502	Canada
Hogan. MJ.	2010	E.I: stress management measured by The Emotional Quotient Inventory: Youth Version (EQ-i:YV) (Bar-On & Parker, 2000a)	192	96	96	0,389481579	Canada
Jordan. JA.	2010	EI: interpersonal measured by the long form of the Bar-On Emotional Quotient Inventory Youth Version (EQ-i:YV; Bar-On and Parker 2000)	86	37	49	-1,03881672	Northern Ireland
Jordan. JA.	2010	EI: intrapersonal measured by the long form of the Bar-On Emotional Quotient Inventory Youth Version (EQ-i:YV; Bar-On and Parker 2000)	86	37	49	-0,760360734	Northern Ireland
Jordan. JA.	2010	EI: stress management measured by the long form of the Bar-On Emotional Quotient Inventory Youth Version (EQ-i:YV; Bar-On and Parker 2000)	86	37	49	-0,027209313	Northern Ireland
Jordan. JA.	2010	EI adaptability measured by the long form of the Bar-On Emotional Quotient Inventory Youth Version (EQ-i:YV; Bar-On and Parker 2000)	86	37	49	0,896866175	Northern Ireland
Jordan. JA.	2010	EI total measured by the long form of the Bar-On Emotional Quotient Inventory Youth Version (EQ-i:YV; Bar-On and Parker 2000)	86	37	49	-0,297966944	Northern Ireland
Williams. C.	2009	Ability EI measured by The Emotion Focusing Task (EFT)	598	311	287	-0,176700997	North Wales
Williams. C.	2009	Ability EI measured by Story Stems	598	311	287	-0,552257778	North Wales

Williams. C.	2009	Ability EI measured by Facial Expression Recognition	598	311	287	-0,307182595	North Wales
Williams. C.	2009	Trait EI measured by the Trait Emotional Intelligence Questionnaire – Adolescent Short Form (TEIQue – ASF)	598	311	287	-0,223680471	North Wales
Williams. C.	2009	Trait EI measured by the Schutte Self-Report Emotional Intelligence (SSREI; Schutte et al., 1998)	598	311	287	-0,134529225	North Wales

Appendix 4.2.5: Emotion regulation

First author	Year	Task	N total	N girls	N boys	Calculated_D	Country
Suh et al..	2019	Emotion Regulation Checklist	271	123	148	-0,398760294	South Korea
Suh et al..	2019	Emotion Regulation Checklist	271	123	148	-0,379182714	South Korea
Suh et al..	2019	Emotion Regulation Checklist	271	123	148	-0,178781622	South Korea
Suh et al..	2019	Emotion Regulation Checklist	271	123	148	-0,370294768	South Korea
Rueth et al..	2019	Regulations of Emotions Questionnaire	1018	576	442	0,158608984	Germany
Rueth et al..	2019	Regulations of Emotions Questionnaire	1018	576	442	-0,104329657	Germany
Rueth et al..	2019	Regulations of Emotions Questionnaire	1018	576	442	-0,12927146	Germany
Rueth et al..	2019	Regulations of Emotions Questionnaire	1018	576	442	0,390169003	Germany
Rueth et al..	2019	Regulations of Emotions Questionnaire	1018	576	442	-0,659946869	Germany

Rueth et al..	2019	Regulations of Emotions Questionnaire	1018	576	442	-0,053639452	Germany
Kokonyei et al..	2019	Cognitive Emotion Regulation Questionnaire - short	1646	611	1035	-0,261661051	Hungary
Kokonyei et al..	2019	Cognitive Emotion Regulation Questionnaire - short	1646	611	1035	-0,079908223	Hungary
Kokonyei et al..	2019	Cognitive Emotion Regulation Questionnaire - short	1646	611	1035	-0,43731138	Hungary
Kokonyei et al..	2019	Cognitive Emotion Regulation Questionnaire - short	1646	611	1035	-0,057713587	Hungary
Kokonyei et al..	2019	Cognitive Emotion Regulation Questionnaire - short	1646	611	1035	-0,182798669	Hungary
Kokonyei et al..	2019	Cognitive Emotion Regulation Questionnaire - short	1646	611	1035	-0,123525507	Hungary
Kokonyei et al..	2019	Cognitive Emotion Regulation Questionnaire - short	1646	611	1035	-0,131441294	Hungary
Kokonyei et al..	2019	Cognitive Emotion Regulation Questionnaire - short	1646	611	1035	-0,208348174	Hungary
Kokonyei et al..	2019	Cognitive Emotion Regulation Questionnaire - short	1646	611	1035	0,220416285	Hungary
Schaan et al..	2019	Messverfahren für emotionale Kompetenz bei Kindern im Vor- und Grundschulalter	15	7	8	0,590037261	Germany
Schaan et al..	2019	Messverfahren für emotionale Kompetenz bei Kindern im Vor- und Grundschulalter	26	10	16	-0,392467289	Germany
Schaan et al..	2019	Messverfahren für emotionale Kompetenz bei Kindern im Vor- und Grundschulalter	8	5	3	0,65815948	Germany
Schaan et al..	2019	Messverfahren für emotionale Kompetenz bei Kindern im Vor- und Grundschulalter	49	22	27	0,136233812	Germany
Garnet et al..	2019	Emotion Regulation Checklist	109	55	54	-0,329792521	USA
Boyes et al..	2015	Emotion Regulation Questionnaire	2637	1793	844	0,059180811	Australia

Boyes et al..	2015	Emotion Regulation Questionnaire	2637	1793	844	0,50960888	Australia	
Lu et al..	2015	Emotion Regulation Questionnaire	4316	2145	2171	-0,517188263	China	
Andres et al..	2016	Cognitive Emotion Regulation Questionnaire	315	165	150	-0,100900305	Argentina	
Andres et al..	2016	Cognitive Emotion Regulation Questionnaire	315	165	150	0,360896852	Argentina	
Andres et al..	2016	Cognitive Emotion Regulation Questionnaire	315	165	150	0,487004297	Argentina	
Andres et al..	2016	Cognitive Emotion Regulation Questionnaire	315	165	150	0,033160264	Argentina	
Andres et al..	2016	Cognitive Emotion Regulation Questionnaire	315	165	150	0,094318402	Argentina	
Teixeira et al..	2015	Emotion Regulation Questionnaire - Children and Adolescents	809	476	333	-0,021841583	Portugal	
Teixeira et al..	2015	Emotion Regulation Questionnaire - Children and Adolescents	809	476	333	0,187272178	Portugal	
Hadley et al..	2015	Emotion Regulation Checklist	376	182	194	-0,14529423	USA	
Skripkauskaite et al..	2015	Difficulties in Emotion Regulation Scale	482	207	275	-0,293069246	Netherlands	
Skripkauskaite et al..	2015	Difficulties in Emotion Regulation Scale	482	207	275	-0,212020138	Netherlands	
Zhao et al..	2015	Emotion Regulation Questionnaire	504	316	188	-0,082640214	China	
Zhao et al..	2015	Emotion Regulation Questionnaire	504	316	188	0,369814181	China	
Roos et al..	2015	Early Adolescent Temperament Questionnaire		307	174	133	-0,699892537	Finland

Santas et al..	2013	Difficulties in Emotion Regulation Scale	349	207	142	0,07957274	Turkey
Santas et al..	2013	Difficulties in Emotion Regulation Scale	349	207	142	-0,119802936	Turkey
Calvete et al..	2012	Social Information Processing Questionnaire	1125	627	498	-0,298259046	Spain
Monopoli et al..	2012	Emotion Regulation Checklist	65	35	30	-0,788945928	USA
Bowie	2010	Child Self-report of Emotional Experience	111	60	51	-0,131975894	USA
Bowie	2010	Child Self-report of Emotional Experience	111	60	51	-0,063183993	USA

Appendix 4.2.6: Self-regulation

First author	Year	Task	N total	N girls	N boys	Calculated_ D	Country
Liu et al..	2018	Intentional self-regulation: Selection. Optimisation. and Compensation Questionnaire	590	277	313	0,098463157	Taiwan
Liu et al..	2018	Intentional self-regulation: Selection. Optimisation. and Compensation Questionnaire	586	275	311	0,095096325	Taiwan
Liu et al..	2018	Intentional self-regulation: Selection. Optimisation. and Compensation Questionnaire	581	276	305	0,067636154	Taiwan
Storksen et al..	2015	Individual behavioural regulation: Head-Toes-Knees-Shoulders task	243	119	124	-0,634171335	Norway
Storksen et al..	2015	Classroom behavioural regulation: Survey of Early School Adjustment	243	119	124	-0,569268315	Norway

Hubert et al..	2015	Self-regulation: Head-Toes-Knees-Shoulder task	138	66	72	-0,363913512	France	
Hubert et al..	2015	Self-regulation: Head-Toes-Knees-Shoulder task	138	66	72	-0,163402558	France	
Lee et al..	2014	Academic self-regulation: Motivated Strategies for Learning Questionnaire	499	253	246	-0,120994006	USA	
Lee et al..	2014	Academic self-regulation: Motivated Strategies for Learning Questionnaire	499	253	246	0,201757516	South Korea	
Lee et al..	2014	Academic self-regulation: Motivated Strategies for Learning Questionnaire	499	253	246	-0,010453645	South Korea	
Lee et al..	2014	Academic self-regulation: Motivated Strategies for Learning Questionnaire	499	253	246	0,104459301	South Korea	
Weis et al..	2013	Self-regulation: Self-control scale	53	34	19	-0,694163266	Germany	
von Suchodoletz et al..	2012	Self-regulation: Head-Toes-Knees-Shoulder task	190	100	90	0,443684516	Germany	
von Suchodoletz et al..	2012	Self-regulation: Head-to-Toes task	111	55	56	-0,037962799	Iceland	
von Suchodoletz et al..	2012	Self-regulation: Head-Toes-Knees-Shoulder task	111	46	65	-0,468924844	Iceland	
McCoy et al..	2011	Self-regulation: Barratt Impulsiveness Scale-11 (Cognitive)		215	99	116	0,210663898	USA
McCoy et al..	2011	Self-regulation: Barrat Impulsiveness Scale-11 (Behavioural)		215	99	116	0,32197008	USA
Hong et al..	2009	Self-regulation: Self Assessment Questionnaire - Homework (self-check)	240	116	124	0,111683628	China	
Hong et al..	2009	Self-regulation: Self Assessment Questionnaire - Homework (self-check)	294	179	115	0,144633722	China	

Appendix 5: R code

```
packages <- c("readxl","meta","ggplot2","grid","knitr","scales")


# This part automaically installs the packages if they are not already there
if (length(setdiff(packages, rownames(installed.packages()))) > 0) {
  install.packages(setdiff(packages, rownames(installed.packages())))
}
lapply(packages, library, character.only = TRUE)


text_col <- "black"
font_size <- 12
col_gender_pres <- c("#F3B7A8","#525B5A")


data_table <- NULL
temp_table <- NULL
tabselect <- c(4:8,10:14) # Social skills toevoegen door 4 in 3 te veranderen


for(i in c(tabselect)){
    temp_table <- read_excel("C:/Users/immel/Desktop/BP_2020_data/Table_for_Literature_Search.xlsx",sheet= i, skip=1,col_names=TRUE)[1:32]
    temp_table_name <- as.data.frame(read_excel("C:/Users/immel/Desktop/BP_2020_data/Table_for_Literature_Search.xlsx",sheet= i,
col_names=F)[1,1])[1,1]
```

```
    temp_table <- cbind(temp_table_name,temp_table)
    names(temp_table)[1] <- 'Variable'
    data_table <- rbind(data_table,temp_table)
}

data_table <- data_table[complete.cases(data_table[,2]), ]
data_table <- data_table[!data_table[,2]=="<NA>", ]

data_table <- data_table[data_table$Include=='yes'&!is.na(data_table$Include),]

data_table$`sign (p-waarde)` <- ifelse(is.na(data_table$`sign (p-waarde)` ),data_table$Calculated_p,data_table$`sign (p-waarde)` )
data_table$`Cohens D` <- as.numeric(data_table$`Cohens D`)

data_table$`Cohens D` <- ifelse(is.na(data_table$`Cohens D`),data_table$Calculated_D,data_table$`Cohens D`)

data_table$`Cohens D` <- ifelse(data_table$`Reverse Cohen's D`=="yes",-1*data_table$`Cohens D`,data_table$`Cohens D`)

data_table[,'Mean boys'] <- ifelse(data_table$`Reverse Cohen's D`=="yes"&!is.na(data_table$`Reverse Cohen's D`),-1*data_table[,'Mean boys'],data_table[,'Mean boys'])
data_table[,'Mean girls'] <- ifelse(data_table$`Reverse Cohen's D`=="yes"&!is.na(data_table$`Reverse Cohen's D`),-1*data_table[,'Mean girls'],data_table[,'Mean girls'])
```

```
data <- data_table
variable_names <- levels(data$Variable)

data$Study <- paste(gsub( " .*$", "", data$'First author'),"et al.",data$Year,sep=" ")

data <- data[order(data$Variable,data$Study,data$'Cohens D'),]

data$Grouping_variable <- data$`Western?`

table_Meta <- NULL
for (i in c(1:length(variable_names))) {

    #Select all measures of the variable
    table_Meta_temp <- variable_names[i]
    data_temp <- data[data$Variable==variable_names[i],]

     # This is the actual meta analysis boys are the exeperimental group, girls are the control group
     m.hksj.raw <- meta::metacont(data_temp[,'N boys'],
                                  data_temp[,'Mean boys'],
```

```
data_temp[,'SD boys'],
 data_temp[,'N girls'],
data_temp[,'Mean girls'],
 data_temp[,'SD girls'],
 data=data_temp,
 studlab=paste(Study),
 byvar=Grouping_variable, # This is your grouping variable (depending on the quesion remove by commenting out)
   comb.fixed = TRUE,
comb.random = TRUE,
 method.tau = "SJ",
 hakn = TRUE,
 prediction=TRUE,
 sm="SMD")

  m.hksj.raw
meta::forest(m.hksj.raw, lab.e="Boys", lab.c="Girls")

  # Add title of variable name
  grid::grid.text(paste(variable_names[i],sep=" "), .5, .9, gp=grid::gpar(cex=2))
```

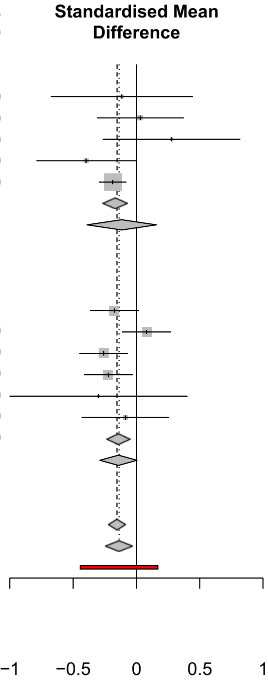
```
    # Save the graph in folder
    filename<- paste("C:/Users/immel/Desktop/BP_2020_data/Forest_",variable_names[i],".pdf",sep="")
    dev.copy(pdf,filename,width=595/50,height=842/50)
    dev.off()

     # save outcome in a table
    table_Meta_temp$mean_ES <- m.hksj.raw$TE.random
     table_Meta_temp$mean_ES_lower <- m.hksj.raw$lower.random
    table_Meta_temp$mean_ES_upper <- m.hksj.raw$upper.random

     table_Meta_temp$sign_ES <- m.hksj.raw$pval.random
     table_Meta_temp$heterogeneity <- m.hksj.raw$pval.Q
     table_Meta_temp$School_type_p <- m.hksj.raw$pval.Q.b.random

      table_Meta <- rbind(table_Meta,table_Meta_temp)

     }

kable(table_Meta)
write.table(table_Meta,file=paste("C:/Users/immel/Desktop/BP_2020_data/Tabel_meta_analysis.csv",sep=""),sep=",",row.names=F)
```

Appendix 6.1: Forest plot cognitive control/inhibition

Inhibition (Leonard)

Study	Boys Total	Boys Mean	Boys SD	Girls Total	Girls Mean	Girls SD	SMD	95%−CI	Weight (fixed)	Weight (random)
Grouping_variable = 1										
Alarcon. et al. 2018	24	25.60	12.8000	25	27.20	14.5000	−0.11	[−0.68; 0.45]	1.4%	3.5%
Chung. et al. 2019	66	202.39	9.8200	64	202.13	6.7300	0.03	[−0.31; 0.37]	3.8%	7.2%
Herba. et al. 2016	29	186.62	49.0500	24	171.86	56.4100	0.28	[−0.27; 0.82]	1.5%	3.6%
Nolin. et al. 2016	49	0.38	0.0360	53	0.40	0.0560	−0.40	[−0.79; 0.00]	2.9%	6.0%
Sijtsema. et al. 2010	619	2.77	0.5200	713	2.87	0.5500	−0.19	[−0.29; −0.08]	38.1%	17.7%
Fixed effect model	**787**			**879**			**−0.17**	**[−0.26; −0.07]**	**47.6%**	**--**
Random effects model							**−0.12**	**[−0.39; 0.16]**	**--**	**38.0%**
Heterogeneity: $I^2 = 25\%$, $\tau^2 = 0.0308$, $p = 0.26$										
Grouping_variable = 0										
Li. et al. 2019	204	57.01	10.2900	212	58.62	8.2300	−0.17	[−0.37; 0.02]	12.0%	13.1%
Li. et al. 2019	204	71.89	16.3900	212	70.64	14.4500	0.08	[−0.11; 0.27]	12.0%	13.1%
Li. et al. 2019	204	20.03	2.8500	212	20.82	3.2500	−0.26	[−0.45; −0.06]	11.9%	13.1%
Li. et al. 2019	204	42.51	5.1800	212	43.67	5.2900	−0.22	[−0.41; −0.03]	11.9%	13.1%
Liu. et al. 2012	14	453.50	84.3000	18	472.80	39.8000	−0.30	[−1.00; 0.40]	0.9%	2.3%
Rosenberg−Kima. et al. 2010	53	360.42	25.6700	81	362.76	27.4900	−0.09	[−0.43; 0.26]	3.7%	7.1%
Fixed effect model	**883**			**947**			**−0.14**	**[−0.23; −0.05]**	**52.4%**	**--**
Random effects model							**−0.14**	**[−0.29; 0.01]**	**--**	**62.0%**
Heterogeneity: $I^2 = 34\%$, $\tau^2 = 0.0095$, $p = 0.18$										
Fixed effect model	**1670**			**1826**			**−0.15**	**[−0.22; −0.09]**	**100.0%**	**--**
Random effects model							**−0.14**	**[−0.24; −0.03]**	**--**	**100.0%**
Prediction interval								**[−0.44; 0.17]**		

Heterogeneity: $I^2 = 23\%$, $\tau^2 = 0.0161$, $p = 0.22$
Residual heterogeneity: $I^2 = 30\%$, $p = 0.17$



Appendix 6.2: Forest plot intelligence

Intelligence (Albena)

Bakhiet, et al. 2015	473	9.08	3.9700	545	9.81	4.0300	−0.18	[−0.31; −0.06]	0.2%	1.4%
Bakhiet, et al. 2015	473	8.55	3.1800	545	9.22	4.2300	−0.18	[−0.30; −0.05]	0.2%	1.4%
Bakhiet, et al. 2015	473	7.56	4.1400	545	8.05	3.9800	−0.12	[−0.24; 0.00]	0.2%	1.4%
Bakhiet, et al. 2015	473	98.76	17.7100	545	100.43	17.2300	−0.10	[−0.22; 0.03]	0.2%	1.4%
Bakhiet, et al. 2015	473	9.91	3.2500	545	10.16	3.0300	−0.08	[−0.20; 0.04]	0.2%	1.4%
Bakhiet, et al. 2015	473	11.64	6.3200	545	11.97	4.0900	−0.06	[−0.19; 0.06]	0.2%	1.4%
Bakhiet, et al. 2015	473	94.81	15.9900	545	95.35	15.6700	−0.03	[−0.16; 0.09]	0.2%	1.4%
Bakhiet, et al. 2015	473	9.89	4.1700	545	10.11	4.3200	−0.05	[−0.17; 0.07]	0.2%	1.4%
Bakhiet, et al. 2015	473	9.98	3.9000	545	9.92	3.8400	0.02	[−0.11; 0.14]	0.2%	1.4%
Bakhiet, et al. 2015	473	6.81	3.6800	545	6.68	3.8100	0.03	[−0.09; 0.16]	0.2%	1.4%
Bakhiet, et al. 2015	473	91.19	16.5500	545	90.48	16.0500	0.04	[−0.08; 0.17]	0.2%	1.4%
Bakhiet, et al. 2015	473	8.61	3.6400	545	8.41	3.5600	0.06	[−0.07; 0.18]	0.2%	1.4%
Bakhiet, et al. 2015	473	9.13	3.3500	545	8.86	3.2300	0.08	[−0.04; 0.21]	0.2%	1.4%
Bakhiet, et al. 2015	473	9.19	3.5400	545	8.76	3.4900	0.12	[0.00; 0.25]	0.2%	1.4%
Bakhiet, et al. 2015	473	8.50	3.1700	545	8.00	3.3000	0.15	[0.03; 0.28]	0.2%	1.4%
Bakhiet, et al. 2015	473	8.79	4.6400	545	7.63	3.9200	0.27	[0.15; 0.40]	0.2%	1.4%
Ezenwosu, et al. 2013	55	94.93	18.7200	35	96.54	15.0400	−0.09	[−0.52; 0.33]	0.0%	0.6%
Liu, et al. 2011	728	12.72	3.5700	603	13.11	5.3400	−0.09	[−0.20; 0.02]	0.2%	1.4%
Liu, et al. 2011	728	17.02	4.5000	603	17.19	4.6400	−0.04	[−0.15; 0.07]	0.2%	1.4%
Liu, et al. 2011	728	43.59	9.4000	603	43.24	9.4800	0.04	[−0.07; 0.15]	0.2%	1.4%
Liu, et al. 2011	728	14.35	3.7500	603	13.98	4.1000	0.09	[−0.01; 0.20]	0.2%	1.4%
Liu, et al. 2011	728	14.61	3.5400	603	14.20	3.6300	0.11	[0.01; 0.22]	0.2%	1.4%
Liu, et al. 2011	728	104.81	15.1000	603	103.15	15.1600	0.11	[0.00; 0.22]	0.2%	1.4%
Liu, et al. 2011	728	15.83	2.5100	603	15.49	2.3000	0.14	[0.03; 0.25]	0.2%	1.4%
Liu, et al. 2011	728	104.80	14.7800	603	102.94	14.8600	0.13	[0.02; 0.23]	0.2%	1.4%
Liu, et al. 2011	728	105.09	14.1900	603	103.10	14.5500	0.14	[0.03; 0.25]	0.2%	1.4%
Liu, et al. 2011	728	15.63	2.6000	603	15.13	2.6900	0.19	[0.08; 0.30]	0.2%	1.4%
Liu, et al. 2011	728	19.76	5.9100	603	18.63	5.6600	0.19	[0.09; 0.30]	0.2%	1.4%
Liu, et al. 2011	728	18.31	3.7600	603	17.39	4.0900	0.23	[0.13; 0.34]	0.2%	1.4%
Liu, et al. 2011	728	18.55	5.1000	603	16.62	5.9700	0.35	[0.24; 0.46]	0.2%	1.4%
Liu, et al. 2015	426	11.85	2.5300	362	12.85	2.1600	−0.42	[−0.56; −0.28]	0.1%	1.3%
Liu, et al. 2015	426	9.25	1.9300	362	9.31	1.9400	−0.03	[−0.17; 0.11]	0.1%	1.3%
Liu, et al. 2015	426	9.05	2.3400	362	9.06	2.3600	−0.00	[−0.14; 0.14]	0.1%	1.3%
Liu, et al. 2015	426	10.01	2.2200	362	10.00	2.2300	0.00	[−0.14; 0.14]	0.1%	1.3%
Liu, et al. 2015	426	13.42	3.1500	362	13.11	3.1200	0.10	[−0.04; 0.24]	0.1%	1.3%
Liu, et al. 2015	426	51.77	9.1400	362	50.33	8.6500	0.16	[0.02; 0.30]	0.1%	1.3%
Liu, et al. 2015	426	8.58	2.4300	362	8.14	2.2500	0.19	[0.05; 0.33]	0.1%	1.3%
Liu, et al. 2015	426	12.74	2.3100	362	12.29	2.4900	0.19	[0.05; 0.33]	0.1%	1.3%
Liu, et al. 2015	426	106.62	13.9500	362	103.11	13.4300	0.26	[0.12; 0.40]	0.1%	1.3%
Liu, et al. 2015	426	54.78	7.6900	362	52.73	6.7000	0.28	[0.14; 0.42]	0.1%	1.3%
Liu, et al. 2015	426	9.65	2.3000	362	8.85	2.1700	0.36	[0.22; 0.50]	0.1%	1.3%
Liu, et al. 2015	426	11.42	2.5100	362	10.45	2.4500	0.39	[0.25; 0.53]	0.1%	1.3%
Liu, et al. 2015	426	9.98	2.9900	362	8.73	2.4700	0.45	[0.31; 0.59]	0.1%	1.3%
Ziada, et al. 2019	65	16.83	4.4400	63	18.08	4.6900	−0.27	[−0.62; 0.08]	0.0%	0.7%
Ziada, et al. 2019	152	26.38	6.9700	152	26.18	6.5100	0.03	[−0.20; 0.25]	0.0%	1.0%
Ziada, et al. 2019	121	21.20	7.7700	148	20.97	7.4600	0.03	[−0.21; 0.27]	0.0%	1.0%
Ziada, et al. 2019	71	24.66	7.0900	78	24.13	6.6200	0.08	[−0.24; 0.40]	0.0%	0.8%
Ziada, et al. 2019	156	23.78	6.8400	170	23.19	6.9500	0.09	[−0.13; 0.30]	0.1%	1.1%
Ziada, et al. 2019	119	21.94	7.3500	111	20.33	6.7600	0.23	[−0.03; 0.49]	0.0%	0.9%
Ziada, et al. 2019	179	22.71	7.3900	171	21.05	7.1700	0.23	[0.02; 0.44]	0.1%	1.1%
Fixed effect model	23519			22242			0.08	[0.06; 0.10]	7.3%	−−
Random effects model							0.08	[0.03; 0.13]	−−	64.7%

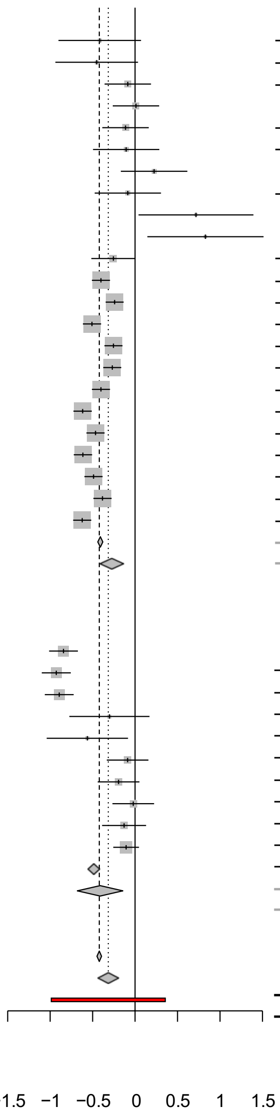
Heterogeneity: $I^2 = 82\%$, $\tau^2 = 0.0227$, $p < 0.01$

Grouping_variable = 1	Rando				3.000			99.70		2.900
Calvin, et al. 2010	m	89054	99.20	14.900	0	89545	101.3	99.30	14.100	0
Calvin, et al. 2010	effect	89054	100.60	0	3.000	89545	0	10.20	0	2.900
Calvin, et al. 2010	s	89054	100.50	14.700	0	89545	101.0	10.50	13.800	0
Carreras, et al. 2014	model	63	2.40	0	15.200	64	0		0	14.800
Gil−Espinosa, et al. 2019		74	23.92	14.900	0	55	99.20		13.500	0
Lemos, et al. 2013		828	8.77	0	3.000	886	2.42		0	2.900
Lemos, et al. 2013		828	9.72	0.640	0	886	23.24		0.630	0
Lemos, et al. 2013		828	14.14	0	3.000	886	8.45		0	2.900
Lemos, et al. 2013		828	12.77	5.760	0	886	9.39		7.220	0
Lemos, et al. 2013		828	10.34	0	15.300	886	13.83		0	14.500
Pezzuti, et al. 2016		1100	97.90	3.960	0	1100	12.49		3.520	0
Pezzuti, et al. 2016		1100	10.20	0	3.000	1100	8.33		0	3.000
Pezzuti, et al. 2016		1100	10.20	4.010	0	1100	102.1		4.030	0
Pezzuti, et al. 2016		1100	10.10	0	3.000	1100	0		0	2.900
Pezzuti, et al. 2016		1100	10.00	3.690	0	1100	9.80		3.720	0
Pezzuti, et al. 2016		1100	99.80	0	15.300	1100	9.90		0	14.700
Pezzuti, et al. 2016		1100	10.00	3.200	0	1100	9.80		3.220	0
Pezzuti, et al. 2016		1100	10.00	0	15.500	1100	9.90		0	14.800
Pezzuti, et al. 2016		1100	100.10	3.000	0	1100	100.2		3.010	0
Pezzuti, et al. 2016		1100	10.00	0	2.900	1100	0		0	3.000
Pezzuti, et al. 2016		1100	10.00	14.300	0	1100	10.00		15.600	0
Pezzuti, et al. 2016		1100	100.30	0	2.800	1100	10.00		0	3.100
Pezzuti, et al. 2016		1100	100.60	3.100	0	1100	100.0		2.800	0
Pezzuti, et al. 2016		1100	9.80	0		1100	0		0	
Pezzuti, et al. 2016		1100	9.50	3.100		1100	10.10		2.800	
Fixed effect model		287939		0		289684	10.10		0	

Appendix 6.3: (Basic) language skills

(basic) Language skills (Nicole Loomans)

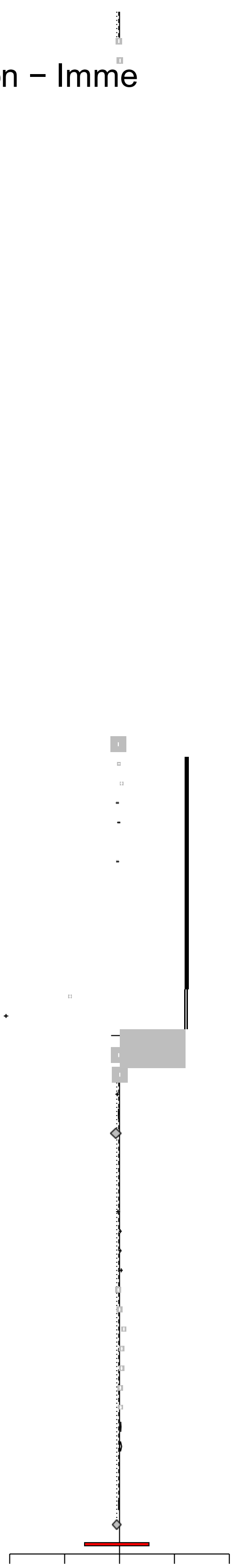
Study	Boys Total	Boys Mean	Boys SD	Girls Total	Girls Mean	Girls SD	SMD	95%−CI	Weight (fixed)	Weight (random)
Grouping_variable = 1										
Bourke. et al. 2012	31	42.90	12.4000	36	47.55	9.7400	−0.42	[−0.90; 0.07]	0.3%	2.3%
Bourke. et al. 2012	31	46.38	13.3300	36	52.22	12.3200	−0.45	[−0.94; 0.04]	0.3%	2.3%
Duncan. et al. 2016	89	102.53	12.3200	122	103.54	11.3200	−0.09	[−0.36; 0.19]	1.0%	3.0%
Duncan. et al. 2016	89	103.36	15.8000	122	103.21	12.3300	0.01	[−0.26; 0.28]	1.0%	3.0%
Duncan. et al. 2016	89	100.35	16.0700	122	102.00	13.6300	−0.11	[−0.39; 0.16]	1.0%	3.0%
Duncan. et al. 2016	50	97.86	11.3500	51	99.08	11.8600	−0.10	[−0.49; 0.29]	0.5%	2.6%
Duncan. et al. 2016	50	102.53	13.7600	51	99.55	12.6400	0.22	[−0.17; 0.62]	0.5%	2.6%
Duncan. et al. 2016	50	101.46	13.7600	51	102.59	12.7500	−0.08	[−0.47; 0.31]	0.5%	2.6%
Huestegge. et al. 2012	18	81.00	12.0000	18	68.00	22.0000	0.72	[0.04; 1.39]	0.2%	1.7%
Huestegge. et al. 2012	18	35.00	6.0000	18	29.00	8.0000	0.83	[0.15; 1.51]	0.2%	1.7%
Reynolds. et al. 2010	117	97.50	13.2000	115	100.69	11.5800	−0.26	[−0.51; 0.00]	1.1%	3.1%
Torppa. et al. 2018	668	20.71	6.8100	707	23.25	5.8400	−0.40	[−0.51; −0.29]	6.5%	3.5%
Torppa. et al. 2018	668	8.66	2.9800	707	9.34	2.6900	−0.24	[−0.35; −0.13]	6.6%	3.5%
Torppa. et al. 2018	668	4.97	2.6900	707	6.25	2.3600	−0.51	[−0.61; −0.40]	6.4%	3.5%
Torppa. et al. 2018	668	5.48	1.6900	707	5.88	1.4500	−0.25	[−0.36; −0.15]	6.5%	3.5%
Torppa. et al. 2018	668	8.02	2.1800	707	8.58	1.9900	−0.27	[−0.37; −0.16]	6.5%	3.5%
Torppa. et al. 2018	668	11.10	4.7600	707	12.89	4.1600	−0.40	[−0.51; −0.29]	6.5%	3.5%
Torppa. et al. 2018	668	−0.31	1.0100	707	0.28	0.9000	−0.62	[−0.73; −0.51]	6.3%	3.5%
Torppa. et al. 2018	668	48.69	22.0900	707	58.35	19.4300	−0.46	[−0.57; −0.36]	6.4%	3.5%
Torppa. et al. 2018	668	59.84	16.9700	707	69.88	15.7700	−0.61	[−0.72; −0.50]	6.3%	3.5%
Torppa. et al. 2018	668	32.59	9.7500	707	36.94	7.9800	−0.49	[−0.60; −0.38]	6.4%	3.5%
Torppa. et al. 2020	659	−0.19	0.9500	699	0.14	0.7700	−0.38	[−0.49; −0.28]	6.4%	3.5%
Torppa. et al. 2020	697	−0.29	0.8700	715	0.23	0.8000	−0.62	[−0.73; −0.52]	6.5%	3.5%
Fixed effect model	8668			9226			−0.41	[−0.44; −0.38]	83.7%	--
Random effects model							−0.28	[−0.41; −0.14]	--	69.6%
Heterogeneity: $I^2 = 83\%$, $\tau^2 = 0.0955$, $p < 0.01$										
Grouping_variable = 0										
Jang. et al. 2019	272	7.15	7.5900	313	17.23	14.7300	−0.84	[−1.01; −0.67]	2.6%	3.3%
Jang. et al. 2019	272	9.03	9.9800	313	23.35	18.9300	−0.93	[−1.10; −0.76]	2.5%	3.3%
Jang. et al. 2019	272	5.57	5.8400	313	13.89	11.5100	−0.89	[−1.06; −0.72]	2.5%	3.3%
Memisevic. et al. 2019	36	59.30	31.2000	34	69.30	34.3000	−0.30	[−0.77; 0.17]	0.3%	2.3%
Memisevic. et al. 2019	37	90.40	35.0000	33	109.50	32.1000	−0.56	[−1.04; −0.08]	0.3%	2.3%
Riso. et al. 2019	132	6.24	2.6000	124	6.46	2.4000	−0.09	[−0.33; 0.16]	1.2%	3.1%
Riso. et al. 2019	132	13.70	2.2000	124	14.10	1.9000	−0.19	[−0.44; 0.05]	1.2%	3.1%
Riso. et al. 2019	132	5.47	1.5000	124	5.50	1.3000	−0.02	[−0.27; 0.22]	1.2%	3.1%
Salihu. et al. 2018	132	3.07	1.4400	101	3.25	1.3400	−0.13	[−0.39; 0.13]	1.1%	3.1%
Völkel. et al. 2016	332	30.60	15.3000	338	32.20	15.3000	−0.10	[−0.26; 0.05]	3.2%	3.4%
Fixed effect model	1749			1817			−0.49	[−0.55; −0.42]	16.3%	--
Random effects model							−0.41	[−0.68; −0.14]	--	30.4%
Heterogeneity: $I^2 = 93\%$, $\tau^2 = 0.1215$, $p < 0.01$										
Fixed effect model	**10417**			**11043**			**−0.42**	**[−0.45; −0.39]**	**100.0%**	**--**
Random effects model							**−0.32**	**[−0.44; −0.19]**	**--**	**100.0%**
Prediction interval								**[−0.99; 0.36]**		



Heterogeneity: $I^2 = 88\%$, $\tau^2 = 0.1047$, $p < 0.01$
Residual heterogeneity: $I^2 = 88\%$, $p < 0.01$

Appendix 6.4: motivation

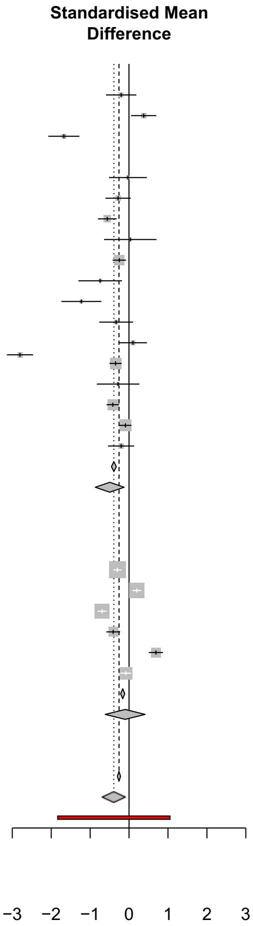
Study	Boys Total	Boys Mean	Boys SD	Girls Total	Girls Mean	Girls SD	SMD	95%−CI	Weight (fixed)	Weight (random)
Grouping_variable = 1										
Arbabi. et al. 2015	584	4.17	0.5900	536	4.24	0.5500	−0.12	[−0.24; −0.01]	2.3%	1.7%
Arbabi. et al. 2015	584	3.45	0.7900	536	3.37	0.7900	0.10	[−0.02; 0.22]	2.3%	1.7%
Brandenberger. et al. 2018	169	3.23	0.8800	179	2.85	0.9100	0.42	[0.21; 0.64]	0.7%	1.7%
Brandenberger. et al. 2018	169	3.04	0.8500	179	2.79	0.9100	0.28	[0.07; 0.49]	0.7%	1.7%
Brandenberger. et al. 2018	169	4.08	0.6500	179	3.03	0.7100	1.54	[1.30; 1.78]	0.6%	1.7%
Brandenberger. et al. 2018	169	4.08	0.8400	179	3.99	0.8400	0.11	[−0.10; 0.32]	0.7%	1.7%
Bugler. et al. 2015	384	47.68	10.1600	366	51.58	10.2400	−0.38	[−0.53; −0.24]	1.5%	1.7%
Bugler. et al. 2015	384	51.31	9.1600	366	53.09	9.6900	−0.19	[−0.33; −0.05]	1.5%	1.7%
Bugler. et al. 2015	384	52.25	11.7900	366	51.61	12.1800	0.05	[−0.09; 0.20]	1.6%	1.7%
Bugler. et al. 2015	384	2.26	2.9000	366	1.96	2.9300	0.10	[−0.04; 0.25]	1.6%	1.7%
Bugler. et al. 2015	384	53.48	10.0100	366	52.50	10.2500	0.10	[−0.05; 0.24]	1.6%	1.7%
Bugler. et al. 2015	384	52.03	10.3100	366	50.40	14.1800	0.13	[−0.01; 0.28]	1.6%	1.7%
Bugler. et al. 2015	384	4.08	3.9400	366	3.42	4.0000	0.17	[0.02; 0.31]	1.5%	1.7%
Bugler. et al. 2015	384	3.54	4.2600	366	2.20	2.9200	0.36	[0.22; 0.51]	1.5%	1.7%
Bugler. et al. 2015	384	45.78	12.4500	366	46.90	11.3000	−0.09	[−0.24; 0.05]	1.6%	1.7%
Bugler. et al. 2015	384	48.23	11.7400	366	50.07	10.3500	−0.17	[−0.31; −0.02]	1.5%	1.7%
Bugler. et al. 2015	384	43.34	12.4000	366	45.42	11.7800	−0.17	[−0.32; −0.03]	1.5%	1.7%
Bugler. et al. 2015	384	50.39	9.7500	366	50.89	9.9300	−0.05	[−0.19; 0.09]	1.6%	1.7%
Bugler. et al. 2015	384	48.35	9.8900	366	50.13	9.8200	−0.18	[−0.32; −0.04]	1.5%	1.7%
Bugler. et al. 2015	384	47.86	11.1200	366	49.54	10.6200	−0.15	[−0.30; −0.01]	1.5%	1.7%
Bugler. et al. 2016	162	150.10	20.5600	162	159.10	21.6500	−0.43	[−0.65; −0.21]	0.7%	1.7%
Bugler. et al. 2016	135	152.18	24.4300	105	158.55	23.6800	−0.26	[−0.52; −0.01]	0.5%	1.7%
Bugler. et al. 2016	162	104.57	18.5900	162	107.48	20.7800	−0.15	[−0.37; 0.07]	0.7%	1.7%
Bugler. et al. 2016	143	155.26	23.3600	110	154.72	24.7400	0.02	[−0.23; 0.27]	0.5%	1.7%
Bugler. et al. 2016	135	109.00	18.6900	105	107.23	21.0500	0.09	[−0.17; 0.34]	0.5%	1.7%
Bugler. et al. 2016	143	100.99	18.2700	110	92.88	17.5500	0.45	[0.20; 0.70]	0.5%	1.7%
Bugler. et al. 2016	143	139.86	36.8300	110	152.65	27.6500	−0.38	[−0.64; −0.13]	0.5%	1.7%
Bugler. et al. 2016	143	148.55	29.1000	110	161.75	25.5300	−0.48	[−0.73; −0.22]	0.5%	1.7%
Bugler. et al. 2016	162	137.88	30.1200	162	137.48	27.9000	0.01	[−0.20; 0.23]	0.7%	1.7%
Bugler. et al. 2016	162	144.85	26.8500	162	146.51	24.5700	−0.06	[−0.28; 0.15]	0.7%	1.7%
Bugler. et al. 2016	135	133.97	27.8200	105	140.23	27.1600	−0.23	[−0.48; 0.03]	0.5%	1.7%
Bugler. et al. 2016	135	144.16	23.3300	105	145.63	23.5300	−0.06	[−0.32; 0.19]	0.5%	1.7%
Cleary. et al. 2009	431	3.43	0.9100	449	3.61	0.6700	−0.23	[−0.36; −0.09]	1.8%	1.7%
De et al. 2018	811	2.91	0.9500	766	3.50	0.8800	−0.64	[−0.74; −0.54]	3.1%	1.7%
De et al. 2018	811	2.84	0.7300	766	2.64	0.7100	0.28	[0.18; 0.38]	3.2%	1.7%
Hadjichambis. et al. 2016	3205	5.38	0.9100	3260	5.55	0.7900	−0.20	[−0.25; −0.15]	13.3%	1.7%
Ishihara. et al. 2018	172	67.50	12.9000	153	68.70	13.1000	−0.09	[−0.31; 0.13]	0.7%	1.7%
Ishihara. et al. 2018	172	49.00	10.9000	153	45.20	10.1000	0.36	[0.14; 0.58]	0.7%	1.7%
McGeown. et al. 2012	98	44.90	8.4100	84	47.88	6.8800	−0.38	[−0.68; −0.09]	0.4%	1.7%
McGeown. et al. 2012	98	25.51	4.2500	84	26.10	4.0000	−0.14	[−0.43; 0.15]	0.4%	1.7%
McGeown. et al. 2015	.	26.41	5.3800	.	29.28	4.9800			0.0%	0.0%
McGeown. et al. 2015	97	19.05	4.8100	126	20.54	3.9600	−0.34	[−0.61; −0.07]	0.4%	1.7%
McGeown. et al. 2015	97	13.94	3.7900	126	14.45	3.1800	−0.15	[−0.41; 0.12]	0.5%	1.7%
McGeown. et al. 2015	97	19.79	4.5200	126	21.17	4.0600	−0.32	[−0.59; −0.06]	0.4%	1.7%
Pitsia. et al. 2017	.	0.15	1.0140	.	−0.14	0.9580			0.0%	0.0%
Pitsia. et al. 2017	.	0.09	1.0170	.	−0.09	0.9710			0.0%	0.0%
Schwabe. et al. 2015	2020	3.18	0.0300	1980	3.41	0.0200	−9.00	[−9.21; −8.80]	0.7%	1.7%
Schwabe. et al. 2015	2544	2.04	0.0300	2435	2.66	0.0300	−20.66	[−21.07; −20.25]	0.2%	1.7%
Sedgewick. et al. 2016	10	6.40	4.9300	13	9.92	5.0200	−0.68	[−1.53; 0.17]	0.0%	1.6%
Vantieghem. et al. 2018	3432	1.98	0.8200	2948	2.09	0.8200	−0.13	[−0.18; −0.08]	13.1%	1.7%
Vantieghem. et al. 2018	3432	2.09	0.7000	2948	2.05	0.7200	0.06	[0.01; 0.11]	13.1%	1.7%
Wolter. et al. 2015	65	2.06	0.5200	70	2.25	0.4200	−0.40	[−0.74; −0.06]	0.3%	1.7%
Fixed effect model	26572			24907			−0.19	[−0.21; −0.17]	88.0%	−−
Random effects model							−0.66	[−1.58; 0.26]	−−	81.7%
Heterogeneity: $I^2 = 100\%$, $\tau^2 = 10.2241$, $p = 0$										
Grouping_variable = 0										
Brody. et al. 2020	59	4.65	1.0300	56	4.90	0.8900	−0.26	[−0.62; 0.11]	0.2%	1.7%
Kim. et al. 2012	105	3.93	1.1600	86	3.78	1.0900	0.13	[−0.15; 0.42]	0.4%	1.7%
Kim. et al. 2012	105	2.59	1.3000	86	2.45	1.2100	0.11	[−0.17; 0.40]	0.4%	1.7%
Kim. et al. 2012	105	2.68	1.3100	86	2.28	1.2200	0.31	[0.03; 0.60]	0.4%	1.7%
King. et al. 2016	363	4.80	0.8900	485	5.01	0.8600	−0.24	[−0.38; −0.10]	1.7%	1.7%
King. et al. 2016	363	4.62	0.9200	485	4.60	1.0400	0.02	[−0.12; 0.16]	1.7%	1.7%
Lee. et al. 2017	368	3.34	1.0000	377	2.67	0.6300	0.80	[0.65; 0.95]	1.4%	1.7%
Lee. et al. 2017	368	3.09	0.9100	377	2.74	0.7000	0.43	[0.29; 0.58]	1.5%	1.7%
Lee. et al. 2017	368	2.98	0.9200	377	2.66	0.7200	0.39	[0.24; 0.53]	1.5%	1.7%
Lee. et al. 2017	368	2.71	0.8300	377	2.59	0.7000	0.16	[0.01; 0.30]	1.5%	1.7%
Tian. et al. 2018	245	19.10	5.4100	324	17.83	5.7200	0.23	[0.06; 0.39]	1.1%	1.7%
Fixed effect model	2817			3116			0.22	[0.17; 0.27]	12.0%	−−
Random effects model							0.20	[0.00; 0.40]	−−	18.3%
Heterogeneity: $I^2 = 92\%$, $\tau^2 = 0.0807$, $p < 0.01$										



Appendix 6.5: Risk-seeking/taking

Risk seekingtaking (Amy)

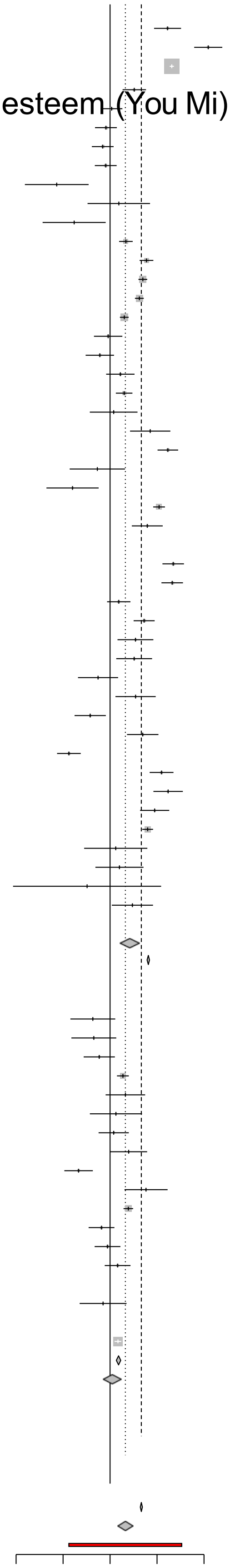
Study	Boys Total	Boys Mean	Boys SD	Girls Total	Girls Mean	Girls SD	SMD	95%−CI	Weight (fixed)	Weight (random)
Grouping_variable = 1										
Arbel. et al. 2018	57	−0.08	0.1700	46	−0.05	0.1100	−0.20	[−0.59; 0.19]	1.1%	4.1%
Auerbach. et al. 2012	68	−6.02	2.4800	83	−6.95	2.4300	0.38	[0.05; 0.70]	1.6%	4.2%
Daughters. et al. 2013	59	−1489.63	72.0900	73	−1374.73	64.8100	−1.68	[−2.08; −1.28]	1.1%	4.1%
de et al. 2017	144	−44.28	0.9100	125	−41.63	0.9800	−2.80	[−3.14; −2.46]	1.5%	4.2%
de et al. 2017	34	−37.20	13.7800	31	−36.81	12.6400	−0.03	[−0.52; 0.46]	0.7%	3.9%
Ewing. et al. 2018	115	−3.16	1.5200	54	−2.72	1.6300	−0.28	[−0.61; 0.04]	1.6%	4.2%
Granie et al. 2009	130	−41.06	12.4000	148	−34.49	11.0500	−0.56	[−0.80; −0.32]	2.9%	4.3%
Harakeh. et al. 2019	16	−46.32	12.4600	18	−46.73	13.2800	0.03	[−0.64; 0.70]	0.4%	3.5%
Keyzers. et al. 2019	290	−1.68	0.5220	229	−1.56	0.4270	−0.25	[−0.42; −0.07]	5.6%	4.4%
Lasenby−Lessard. et al. 2013	24	−5.17	1.5200	29	−3.96	1.6800	−0.74	[−1.30; −0.18]	0.5%	3.8%
Morrongiello. et al. 2012	32	−4.92	2.3900	38	−2.39	1.7000	−1.22	[−1.74; −0.71]	0.6%	3.9%
Morrongiello. et al. 2013	43	−0.27	0.2700	39	−0.19	0.2000	−0.33	[−0.77; 0.11]	0.9%	4.0%
Morrongiello. et al. 2017	60	−5.16	1.6400	60	−5.32	1.5000	0.10	[−0.26; 0.46]	1.3%	4.1%
Rebellon. et al. 2019	273	−1.55	0.7800	388	−1.28	0.7800	−0.35	[−0.50; −0.19]	6.9%	4.4%
Stevens. et al. 2013	26	0.61	0.2300	26	0.68	0.2600	−0.28	[−0.83; 0.27]	0.6%	3.8%
Vermeersch. et al. 2013	301	−39.62	11.1100	298	−35.03	10.9500	−0.42	[−0.58; −0.25]	6.4%	4.4%
Villarreal. et al. 2018	316	−0.17	0.6400	343	−0.12	0.4200	−0.09	[−0.25; 0.06]	7.2%	4.4%
Williams. et al. 2010	65	−38.28	10.9400	72	−35.92	12.0700	−0.20	[−0.54; 0.13]	1.5%	4.2%
Fixed effect model	**2053**			**2100**			**−0.39**	**[−0.45; −0.33]**	**42.3%**	**--**
Random effects model							**−0.50**	**[−0.87; −0.12]**	**--**	**73.7%**
Heterogeneity: $I^2 = 94\%$, $\tau^2 = 0.5205$, $p < 0.01$										
Grouping_variable = 0										
Geckil. et al. 2011	706	−44.00	7.3000	655	−42.00	5.9000	−0.30	[−0.41; −0.19]	14.7%	4.4%
Popovac. et al. 2020	545	−52.42	8.4300	639	−54.06	7.8800	0.20	[0.09; 0.32]	12.8%	4.4%
Rovis. et al. 2015	569	−0.22	0.7980	568	0.26	0.5840	−0.69	[−0.81; −0.57]	11.7%	4.4%
Sasson. et al. 2016	266	−1.60	0.9100	229	−1.29	0.5400	−0.41	[−0.58; −0.23]	5.3%	4.4%
Sychareun. et al. 2013	245	14.60	1.4600	238	13.70	1.1200	0.69	[0.51; 0.87]	5.0%	4.4%
Wang. et al. 2015	337	−2.14	0.6100	433	−2.09	0.5900	−0.08	[−0.23; 0.06]	8.3%	4.4%
Fixed effect model	**2668**			**2762**			**−0.16**	**[−0.22; −0.11]**	**57.7%**	**--**
Random effects model							**−0.10**	**[−0.61; 0.41]**	**--**	**26.3%**
Heterogeneity: $I^2 = 98\%$, $\tau^2 = 0.2316$, $p < 0.01$										
Fixed effect model	**4721**			**4862**			**−0.26**	**[−0.30; −0.22]**	**100.0%**	**--**
Random effects model							**−0.39**	**[−0.69; −0.09]**	**--**	**100.0%**
Prediction interval								**[−1.83; 1.05]**		



Heterogeneity: $I^2 = 96\%$, $\tau^2 = 0.4632$, $p < 0.01$
Residual heterogeneity: $I^2 = 96\%$, $p < 0.01$

Appendix 6.6: confidence/self-esteem

Study	Boys Total	Boys Mean	Boys SD	Girls Total	Girls Mean	Girls SD	SMD	95%−CI	Weight (fixed)	Weight (random)
Grouping_variable = 1										
Aanesen et al. 2017	398	3.17	0.4700	383	2.87	0.5100	0.61	[0.47; 0.76]	0.6%	1.7%
Aanesen et al. 2017	398	3.18	0.5000	383	2.62	0.5700	1.04	[0.90; 1.19]	0.6%	1.7%
Alm et al. 2018	15897	7.83	1.8300	16280	6.52	2.1400	0.66	[0.63; 0.68]	25.7%	1.8%
Choi et al. 2016	452	3.35	0.6700	550	3.17	0.7200	0.26	[0.13; 0.38]	0.8%	1.7%
Coelho et al. 2017	623	30.73	4.7400	524	30.66	4.4100	0.02	[−0.10; 0.13]	1.0%	1.7%
Coelho et al. 2017	623	30.59	4.9100	524	30.80	4.6100	−0.04	[−0.16; 0.07]	1.0%	1.7%
Coelho et al. 2017	623	29.45	5.0400	524	29.83	4.7200	−0.08	[−0.19; 0.04]	1.0%	1.7%
Coelho et al. 2017	623	28.92	5.2800	524	29.16	5.1000	−0.05	[−0.16; 0.07]	1.0%	1.7%
Doumen et al. 2011	70	3.22	0.5800	69	3.50	0.3800	−0.57	[−0.91; −0.23]	0.1%	1.3%
Doumen et al. 2011	70	3.33	0.4400	69	3.29	0.4100	0.09	[−0.24; 0.43]	0.1%	1.3%
Doumen et al. 2011	70	4.00	1.3400	69	4.48	1.1500	−0.38	[−0.72; −0.05]	0.1%	1.3%
Federicova et al. 2018	1523	0.88	0.3280	1422	0.82	0.3840	0.17	[0.10; 0.24]	2.5%	1.7%
Federicova et al. 2018	1523	0.75	0.4330	1422	0.57	0.4950	0.39	[0.31; 0.46]	2.4%	1.7%
Ganley et al. 2016	3460	3.25	0.7300	3580	2.99	0.7600	0.35	[0.30; 0.40]	5.8%	1.8%
Ganley et al. 2016	3460	3.08	0.7600	3580	2.84	0.7800	0.31	[0.26; 0.36]	5.8%	1.8%
Ganley et al. 2016	3460	2.81	0.9100	3580	2.67	0.9400	0.15	[0.10; 0.20]	5.9%	1.8%
Hernandez et al. 2017	337	2.79	0.4700	337	2.80	0.5100	−0.02	[−0.17; 0.13]	0.6%	1.7%
Hernandez et al. 2017	337	2.79	0.4400	337	2.84	0.4800	−0.11	[−0.26; 0.04]	0.6%	1.7%
Hernandez et al. 2017	337	2.75	0.4500	337	2.70	0.4600	0.11	[−0.04; 0.26]	0.6%	1.7%
Ja et al. 2017	958	4.17	0.7600	1038	4.06	0.7100	0.15	[0.06; 0.24]	1.7%	1.7%
Litwack et al. 2012	103	3.90	0.7800	142	3.87	0.7900	0.04	[−0.22; 0.29]	0.2%	1.5%
Lo et al. 2013	201	55.47	10.7900	149	50.91	10.4700	0.43	[0.21; 0.64]	0.3%	1.6%
Makinen et al. 2012	693	31.30	4.8000	650	28.00	5.9000	0.62	[0.51; 0.72]	1.1%	1.7%
Mayer−Brown et al. 2016	82	3.19	0.5500	97	3.27	0.6200	−0.14	[−0.43; 0.16]	0.1%	1.4%
McGeown et al. 2015	103	3.02	0.7100	100	3.28	0.5800	−0.40	[−0.68; −0.12]	0.2%	1.4%
McKay et al. 2012	2026	30.90	4.5500	2062	28.53	4.5400	0.52	[0.46; 0.58]	3.3%	1.8%
McKay et al. 2014	238	30.70	3.9900	372	29.10	4.0600	0.40	[0.23; 0.56]	0.5%	1.6%
Metsapelto et al. 2020	.	3.75	0.7600	.	3.52	0.7700			0.0%	0.0%
Moksnes et al. 2013	603	30.93	5.2200	636	27.30	5.5600	0.67	[0.56; 0.79]	1.0%	1.7%
Moksnes et al. 2016	603	30.92	5.2100	634	27.36	5.5300	0.66	[0.55; 0.78]	1.0%	1.7%
Ramiro et al. 2013	470	20.19	3.8900	529	19.84	3.6400	0.09	[−0.03; 0.22]	0.8%	1.7%
Richardson et al. 2013	549	32.00	5.1000	718	30.00	5.8000	0.36	[0.25; 0.47]	1.0%	1.7%
Schmidt et al. 2015	230	3.52	0.5300	198	3.37	0.5800	0.27	[0.08; 0.46]	0.4%	1.6%
Schmidt et al. 2015	230	3.56	0.5300	198	3.42	0.5600	0.26	[0.07; 0.45]	0.4%	1.6%
Schone et al. 2015	175	2.65	0.7200	163	2.75	0.8400	−0.13	[−0.34; 0.09]	0.3%	1.6%
Schone et al. 2015	175	3.97	0.7300	163	3.76	0.8100	0.27	[0.06; 0.49]	0.3%	1.6%
Schone et al. 2015	283	2.68	0.7500	275	2.84	0.7600	−0.21	[−0.38; −0.05]	0.5%	1.6%
Schone et al. 2015	283	3.83	0.7400	275	3.56	0.8100	0.35	[0.18; 0.52]	0.5%	1.6%
Schone et al. 2015	486	2.50	0.7400	504	2.84	0.8100	−0.44	[−0.56; −0.31]	0.8%	1.7%
Schone et al. 2015	486	3.92	0.7400	504	3.50	0.7900	0.55	[0.42; 0.67]	0.8%	1.7%
Soler et al. 2012	254	16.11	2.8400	458	14.16	3.3100	0.62	[0.46; 0.77]	0.5%	1.7%
Soler et al. 2012	254	10.03	1.4000	458	9.33	1.5100	0.48	[0.32; 0.63]	0.5%	1.7%
van et al. 2010	2377	18.70	3.5000	2357	17.30	3.5000	0.40	[0.34; 0.46]	3.9%	1.8%
Vlachioti et al. 2010	67	21.30	3.2900	69	21.11	3.0000	0.06	[−0.28; 0.40]	0.1%	1.3%
Witherspoon et al. 2013	119	0.05	0.9500	116	−0.05	1.0500	0.10	[−0.16; 0.36]	0.2%	1.5%
Wood et al. 2014	12	27.80	4.0000	13	29.10	6.0000	−0.24	[−1.03; 0.54]	0.0%	0.6%
Zeiders et al. 2013	163	3.03	0.5100	160	2.90	0.5800	0.24	[0.02; 0.46]	0.3%	1.6%
Fixed effect model	46507			47532			0.41	[0.39; 0.42]	76.6%	--
Random effects model							0.21	[0.11; 0.31]	--	74.0%
Heterogeneity: $I^2 = 97\%$, $\tau^2 = 0.1034$, $p < 0.01$										
Grouping_variable = 0										
Chen et al. 2018	157	2.99	0.4300	119	3.07	0.4400	−0.18	[−0.42; 0.06]	0.2%	1.5%
Chen et al. 2018	157	3.01	0.3900	119	3.08	0.4200	−0.17	[−0.41; 0.07]	0.2%	1.5%
Cheung et al. 2011	318	54.20	15.7000	248	56.00	15.7000	−0.11	[−0.28; 0.05]	0.5%	1.6%
Choi et al. 2016	2004	2.87	0.6700	1929	2.78	0.6500	0.14	[0.07; 0.20]	3.3%	1.8%
de et al. 2019	185	28.30	4.4000	165	27.50	5.4000	0.16	[−0.05; 0.37]	0.3%	1.6%
Duraku et al. 2018	103	48.63	7.7300	97	48.19	6.2300	0.06	[−0.22; 0.34]	0.2%	1.4%
Liu et al. 2018	254	3.80	0.7520	358	3.77	0.7450	0.04	[−0.12; 0.20]	0.5%	1.6%
Malik et al. 2016	200	27.14	4.8900	200	26.23	4.2800	0.20	[0.00; 0.39]	0.3%	1.6%
Sahranavard et al. 2012	316	43.57	9.7900	364	47.06	10.9000	−0.34	[−0.49; −0.18]	0.6%	1.7%
Tan et al. 2014	143	4.44	0.9000	155	4.09	0.9200	0.38	[0.15; 0.61]	0.2%	1.5%
Wang et al. 2013	2473	29.20	5.4900	3572	28.16	5.2300	0.19	[0.14; 0.25]	4.9%	1.8%
Wu et al. 2015	422	93.40	13.2700	394	94.57	12.3700	−0.09	[−0.23; 0.05]	0.7%	1.7%
Wu et al. 2015	422	94.00	13.1500	394	94.35	12.7700	−0.03	[−0.16; 0.11]	0.7%	1.7%
Wu et al. 2015	422	95.57	14.2200	394	94.48	12.8900	0.08	[−0.06; 0.22]	0.7%	1.7%
Xiang et al. 2019	.	32.33	5.0900	.	31.80	4.3600			0.0%	0.0%
Xiang et al. 2019	116	31.26	5.8000	132	31.67	5.2000	−0.07	[−0.32; 0.18]	0.2%	1.5%
Xiang et al. 2019	.	30.95	5.8900	.	31.52	4.8000			0.0%	0.0%
Zeng et al. 2017	6145	27.92	4.3500	5674	27.54	4.7300	0.08	[0.05; 0.12]	9.9%	1.8%
Fixed effect model	13837			14314			0.09	[0.07; 0.11]	23.4%	--
Random effects model							0.03	[−0.07; 0.12]	--	26.0%
Heterogeneity: $I^2 = 82\%$, $\tau^2 = 0.0248$, $p < 0.01$										
Fixed effect model	**60344**			**61846**			**0.33**	**[0.32; 0.34]**	**100.0%**	**--**



Appendix 6.7: emotional intelligence

Emotional Intelligence (Albena)

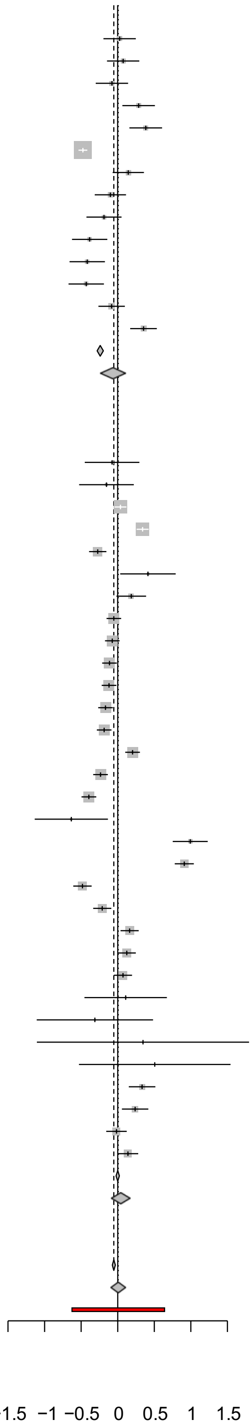
Amado−Alonso. et al. 2019	508	47.61	5.6600	432	48.65	5.7800	−0.18	[−0.31; −0.05]	1.8%	1.3%
Amado−Alonso. et al. 2019	508	163.00	17.1000	432	164.83	15.7800	−0.11	[−0.24; 0.02]	1.8%	1.3%
Amado−Alonso. et al. 2019	508	14.96	3.4400	432	15.26	3.5000	−0.09	[−0.21; 0.04]	1.8%	1.3%
Amado−Alonso. et al. 2019	508	32.01	6.2200	432	31.65	6.1500	0.06	[−0.07; 0.19]	1.8%	1.3%
Amado−Alonso. et al. 2019	508	29.91	5.1200	432	29.49	4.6900	0.09	[−0.04; 0.21]	1.8%	1.3%
Andrei. et al. 2015	181	3.50	0.3900	195	3.70	0.3700	−0.53	[−0.73; −0.32]	0.7%	1.3%
Andrei. et al. 2015	95	3.52	0.3900	107	3.68	0.3800	−0.41	[−0.69; −0.14]	0.4%	1.3%
Castillo. et al. 2013	111	3.07	0.6200	118	3.31	0.6300	−0.38	[−0.64; −0.12]	0.4%	1.3%
Castillo. et al. 2013	111	2.98	0.6400	118	[illegible]	0.6700	−0.23	[−0.49; 0.03]	0.4%	1.3%
Gomez−Baya. et al. 2016	352	12.52	4.4000	362	13.88	3.9500	−0.33	[−0.47; −0.18]	1.4%	1.3%
Gomez−Baya. et al. 2016	352	12.80	4.6000	362	13.89	4.2300	−0.25	[−0.39; −0.10]	1.4%	1.3%
Gomez−Baya. et al. 2016	352	14.41	3.8500	362	14.17	3.5900	0.06	[−0.08; 0.21]	1.4%	1.3%
Gomez−Baya. et al. 2016	352	14.05	3.8000	362	13.55	3.3600	0.14	[−0.01; 0.29]	1.4%	1.3%
Gomez−Baya. et al. 2016	352	14.09	4.1800	362	13.15	4.2600	0.22	[0.08; 0.37]	1.4%	1.3%
Gomez−Baya. et al. 2016	352	14.61	4.1100	362	13.40	4.0900	0.29	[0.15; 0.44]	1.4%	1.3%
Gomez−Baya. et al. 2017	536	3.17	1.1400	342	3.51	1.0000	−0.31	[−0.45; −0.18]	1.6%	1.3%
Gomez−Baya. et al. 2017	536	3.61	0.9300	342	3.54	0.8900	0.08	[−0.06; 0.21]	1.6%	1.3%
Gomez−Baya. et al. 2017	536	3.70	1.0200	342	3.35	1.0300	0.34	[0.20; 0.48]	1.6%	1.3%
Gomez−Baya. et al. 2018	419	12.37	4.2100	461	14.04	3.7800	−0.42	[−0.55; −0.28]	1.7%	1.3%
Gomez−Baya. et al. 2018	419	12.50	4.0800	461	13.81	3.8500	−0.33	[−0.46; −0.20]	1.7%	1.3%
Gomez−Baya. et al. 2018	419	13.87	3.7200	461	13.71	3.3600	0.05	[−0.09; 0.18]	1.7%	1.3%
Gomez−Baya. et al. 2018	419	13.96	4.1800	461	13.24	4.2200	0.17	[0.04; 0.30]	1.7%	1.3%
Gomez−Baya. et al. 2018	419	14.11	3.6400	461	13.33	3.3600	0.22	[0.09; 0.36]	1.7%	1.3%
Gomez−Baya. et al. 2018	419	14.00	4.0900	461	12.97	4.0900	0.25	[0.12; 0.38]	1.7%	1.3%
Gugliandolo. et al. 2015	133	4.76	0.6600	130	4.90	0.7200	−0.20	[−0.44; 0.04]	0.5%	1.3%
Gugliandolo. et al. 2015	133	4.73	0.5200	130	4.70	0.5500	0.06	[−0.19; 0.30]	0.5%	1.3%
Gugliandolo. et al. 2015	133	5.29	0.7400	130	5.24	0.8600	0.06	[−0.18; 0.30]	0.5%	1.3%
Gugliandolo. et al. 2015	133	4.69	0.6400	130	4.59	0.6600	0.15	[−0.09; 0.40]	0.5%	1.3%
Gugliandolo. et al. 2015	133	4.36	0.6700	130	4.18	0.7300	0.26	[0.01; 0.50]	0.5%	1.3%
Gugliandolo. et al. 2019	51	3.75	0.4800	40	3.90	0.4000	−0.33	[−0.75; 0.08]	0.2%	1.2%
Gugliandolo. et al. 2019	51	3.59	0.4000	47	3.70	0.2900	−0.31	[−0.71; 0.09]	0.2%	1.2%
Gugliandolo. et al. 2019	61	3.66	0.4400	50	3.69	0.4400	−0.07	[−0.44; 0.31]	0.2%	1.3%
Herrera. et al. 2020	192	17.48	3.3200	215	18.56	3.3800	−0.32	[−0.52; −0.13]	0.8%	1.3%
Herrera. et al. 2020	192	13.12	3.8600	215	13.02	3.3300	0.03	[−0.17; 0.22]	0.8%	1.3%
Herrera. et al. 2020	192	17.47	3.8400	215	16.30	3.6000	0.31	[0.12; 0.51]	0.8%	1.3%
Herrera. et al. 2020	192	13.31	4.1900	215	11.63	3.4500	0.44	[0.24; 0.64]	0.8%	1.3%
Hogan. et al. 2010	96	34.29	5.2200	96	36.53	4.2600	−0.47	[−0.76; −0.18]	0.4%	1.3%
Hogan. et al. 2010	96	13.77	3.7400	96	13.96	4.2000	−0.05	[−0.33; 0.24]	0.4%	1.3%
Hogan. et al. 2010	96	81.14	11.4500	96	81.03	9.5800	0.01	[−0.27; 0.29]	0.4%	1.3%
Hogan. et al. 2010	96	34.97	6.4500	96	33.05	7.0000	0.28	[0.00; 0.57]	0.4%	1.3%
Hogan. et al. 2010	96	28.68	6.1800	96	26.35	5.2700	0.40	[0.12; 0.69]	0.4%	1.3%
Jordan. et al. 2010	49	38.06	4.2800	37	41.68	3.9100	−0.87	[−1.32; −0.42]	0.2%	1.2%
Jordan. et al. 2010	49	13.84	4.0700	37	16.41	4.5700	−0.59	[−1.03; −0.16]	0.2%	1.2%
Jordan. et al. 2010	49	116.16	12.3500	37	119.03	13.1100	−0.22	[−0.65; 0.20]	0.2%	1.2%
Jordan. et al. 2010	49	33.63	5.9500	37	33.76	6.0600	−0.02	[−0.45; 0.41]	0.2%	1.2%
Jordan. et al. 2010	49	30.63	4.7700	37	27.19	3.9900	0.77	[0.32; 1.21]	0.2%	1.2%
Lopez−Martinez. et al. 2019	611	3.10	0.9100	693	3.41	0.9000	−0.34	[−0.45; −0.23]	2.5%	1.3%
Lopez−Martinez. et al. 2019	611	3.34	0.8100	693	3.35	0.7700	−0.01	[−0.12; 0.10]	2.5%	1.3%
Lopez−Martinez. et al. 2019	611	3.40	0.8900	693	3.39	0.8900	0.01	[−0.10; 0.12]	2.5%	1.3%
Moreno−Manso. et al. 2016	37	1.30	0.4000	29	1.70	0.7000	−0.72	[−1.22; −0.21]	0.1%	1.2%
Moreno−Manso. et al. 2016	37	1.50	0.5000	29	1.60	0.7000	−0.17	[−0.65; 0.32]	0.1%	1.2%
Moreno−Manso. et al. 2016	37	1.40	0.5000	29	1.50	0.7000	−0.17	[−0.65; 0.32]	0.1%	1.2%
Rey. et al. 2018	813	4.96	1.1100	832	5.29	1.0900	−0.30	[−0.40; −0.20]	3.2%	1.3%
Rey. et al. 2018	813	4.86	1.2900	832	4.69	1.3500	0.13	[0.03; 0.23]	3.2%	1.3%
Rey. et al. 2018	813	4.93	0.9500	832	4.73	1.0000	0.20	[0.11; 0.30]	3.2%	1.3%
Rey. et al. 2018	813	5.25	1.1300	832	4.84	1.2800	0.34	[0.24; 0.44]	3.2%	1.3%
Rey. et al. 2018	813	4.65	1.3400	832	4.09	1.4200	0.41	[0.31; 0.50]	3.2%	1.3%
Salavera. et al. 2019	691	37.35	6.5200	667	38.46	7.3000	−0.16	[−0.27; −0.05]	2.7%	1.3%
Salavera. et al. 2019	691	27.31	5.3100	667	27.29	5.5600	0.00	[−0.10; 0.11]	2.7%	1.3%
Salavera. et al. 2019	691	30.58	6.9500	667	29.33	7.9100	0.17	[0.06; 0.27]	2.7%	1.3%
Salavera. et al. 2019	691	26.12	5.1600	667	23.59	6.1700	0.45	[0.34; 0.55]	2.6%	1.3%
Van et al. 2016	212	2.09	0.5700	167	2.38	0.6100	−0.49	[−0.70; −0.29]	0.7%	1.3%
Williams. et al. 2009	287	6.98	2.6700	311	8.21	2.9600	−0.43	[−0.60; −0.27]	1.1%	1.3%
Williams. et al. 2009	287	18.56	3.1300	311	19.32	2.7300	−0.26	[−0.42; −0.10]	1.2%	1.3%
Williams. et al. 2009	287	137.17	24.1700	311	141.00	24.7100	−0.16	[−0.32; 0.00]	1.2%	1.3%
Williams. et al. 2009	287	4.36	2.2900	311	4.70	2.2800	−0.15	[−0.31; 0.01]	1.2%	1.3%
Williams. et al. 2009	287	117.23	18.7500	311	119.02	16.0300	−0.10	[−0.26; 0.06]	1.2%	1.3%
Fixed effect model	22521			22122			−0.00	[−0.02; 0.02]	86.4%	--
Random effects model							−0.05	[−0.12; 0.02]	--	88.4%

Heterogeneity: $I^2 = 91\%$, $\tau^2 = 0.0775$, $p < 0.01$

Grouping_variable = 0	Ran				5.010			136.36		4.780
Herrera. et al. 2017	do	724	33.32	9.4	0	727	36.5	136.12	9.390	0
Herrera. et al. 2017	m	724	44.82	900	4.510	727	6	129.52	0	5.410
Herrera. et al. 2017	effe	724	44.60	12.5	0	727	46.6	36.10	12.000	0
Herrera. et al. 2017	cts	724	55.85	200	4.970	727	3		0	5.510
Naghavi. et al. 2012	mod	116	106.31	11.8	0	118	44.6		11.230	0
Naghavi. et al. 2012	el	116	120.10	500	5.450	118	4		0	5.350
Naghavi. et al. 2012		116	121.84	15.6	0	118	53.5		16.740	0
Naghavi. et al. 2012		116	115.96	200		118	1		0	
Topcu. et al. 2012		340	33.46	3.9		455	130.4		6.020	
Fixed effect model		3700		900		3835	7		0	

Appendix 6.8: emotion regulation

Emotional regulation (San)



Study	Boys Total	Boys Mean	Boys SD	Girls Total	Girls Mean	Girls SD	SMD	95%−CI	Weight (fixed)	Weight (random)
Grouping_variable = 0										
Andres et al. 2016	150	13.88	3.4300	165	13.79	3.3700	0.03	[−0.19; 0.25]	0.8%	2.2%
Andres et al. 2016	150	14.86	3.1800	165	14.62	3.1700	0.08	[−0.15; 0.30]	0.8%	2.2%
Andres et al. 2016	150	15.50	3.3500	165	15.77	3.4700	−0.08	[−0.30; 0.14]	0.8%	2.2%
Andres et al. 2016	150	11.13	3.5100	165	10.13	3.4600	0.29	[0.06; 0.51]	0.8%	2.2%
Andres et al. 2016	150	12.29	3.3800	165	10.98	3.4300	0.38	[0.16; 0.61]	0.8%	2.2%
Lu et al. 2015	2171	4.54	1.0800	2145	5.12	1.3500	−0.47	[−0.54; −0.41]	11.2%	2.5%
Santas et al. 2013	142	−2.28	0.5000	207	−2.36	0.5800	0.15	[−0.07; 0.36]	0.9%	2.3%
Santas et al. 2013	142	−2.06	0.5200	207	−2.01	0.4800	−0.10	[−0.31; 0.11]	0.9%	2.3%
Suh et al. 2019	148	3.95	0.9000	123	4.11	0.7900	−0.19	[−0.43; 0.05]	0.7%	2.2%
Suh et al. 2019	148	3.77	0.8600	123	4.10	0.8600	−0.38	[−0.62; −0.14]	0.7%	2.2%
Suh et al. 2019	148	3.50	0.8200	123	3.80	0.5700	−0.42	[−0.66; −0.18]	0.7%	2.2%
Suh et al. 2019	148	3.53	0.8300	123	3.86	0.6800	−0.43	[−0.67; −0.19]	0.7%	2.2%
Zhao et al. 2015	188	4.71	0.9300	316	4.79	0.9800	−0.08	[−0.26; 0.10]	1.3%	2.3%
Zhao et al. 2015	188	3.99	1.1600	316	3.58	1.1600	0.35	[0.17; 0.53]	1.2%	2.3%
Fixed effect model	4173			4508			−0.24	[−0.28; −0.20]	22.6%	--
Random effects model							−0.06	[−0.23; 0.11]	--	31.6%
Heterogeneity: $I^2 = 93\%$, $\tau^2 = 0.0754$, $p < 0.01$										
Grouping_variable = 1										
Bowie et al. 2010	51	1.81	0.5100	60	1.85	0.5200	−0.08	[−0.45; 0.30]	0.3%	1.8%
Bowie et al. 2010	51	1.75	0.5200	60	1.84	0.6300	−0.15	[−0.53; 0.22]	0.3%	1.8%
Boyes et al. 2015	844	28.74	6.1500	1793	28.50	6.3900	0.04	[−0.04; 0.12]	6.1%	2.5%
Boyes et al. 2015	844	15.06	4.7300	1793	13.41	4.8900	0.34	[0.26; 0.42]	6.1%	2.5%
Calvete et al. 2012	498	1.68	1.3800	627	2.06	1.4000	−0.27	[−0.39; −0.15]	2.9%	2.4%
Garnet et al. 2019	54	−2.87	0.4600	55	−3.06	0.4500	0.41	[0.04; 0.79]	0.3%	1.8%
Hadley et al. 2015	194	−3.15	0.4400	182	−3.23	0.4200	0.19	[−0.02; 0.39]	1.0%	2.3%
Kokonyei et al. 2019	1035	4.90	2.1300	611	5.01	2.1000	−0.05	[−0.15; 0.05]	4.1%	2.5%
Kokonyei et al. 2019	1035	6.22	2.1100	611	6.37	1.9500	−0.07	[−0.17; 0.03]	4.1%	2.5%
Kokonyei et al. 2019	1035	6.12	2.0800	611	6.35	2.0100	−0.11	[−0.21; −0.01]	4.1%	2.5%
Kokonyei et al. 2019	1035	5.50	2.0300	611	5.74	2.0000	−0.12	[−0.22; −0.02]	4.1%	2.5%
Kokonyei et al. 2019	1035	5.93	2.0800	611	6.27	1.9900	−0.17	[−0.27; −0.07]	4.1%	2.5%
Kokonyei et al. 2019	1035	4.42	2.0700	611	4.81	2.1800	−0.18	[−0.28; −0.08]	4.1%	2.5%
Kokonyei et al. 2019	1035	4.15	1.8600	611	3.78	1.7300	0.20	[0.10; 0.30]	4.1%	2.5%
Kokonyei et al. 2019	1035	5.15	1.9800	611	5.62	2.0500	−0.23	[−0.33; −0.13]	4.1%	2.5%
Kokonyei et al. 2019	1035	5.67	2.1200	611	6.50	2.0900	−0.39	[−0.49; −0.29]	4.0%	2.5%
Monopoli et al. 2012	30	24.80	4.0000	35	27.20	3.5000	−0.63	[−1.13; −0.13]	0.2%	1.5%
Roos et al. 2015	133	−2.35	0.3900	174	−2.69	0.3000	0.99	[0.75; 1.23]	0.7%	2.2%
Rueth et al. 2019	442	−2.46	0.4300	576	−2.79	0.3000	0.91	[0.78; 1.04]	2.4%	2.4%
Rueth et al. 2019	442	−2.05	0.5300	576	−1.80	0.5100	−0.48	[−0.61; −0.36]	2.6%	2.4%
Rueth et al. 2019	442	−2.44	0.4100	576	−2.35	0.4400	−0.21	[−0.33; −0.09]	2.7%	2.4%
Rueth et al. 2019	442	−1.98	0.4800	576	−2.06	0.5000	0.16	[0.04; 0.29]	2.7%	2.4%
Rueth et al. 2019	442	−2.02	0.5300	576	−2.09	0.5800	0.13	[0.00; 0.25]	2.7%	2.4%
Rueth et al. 2019	442	−2.08	0.4000	576	−2.11	0.4300	0.07	[−0.05; 0.20]	2.7%	2.4%
Schaan et al. 2019	27	11.89	5.7500	22	11.27	5.4200	0.11	[−0.45; 0.67]	0.1%	1.4%
Schaan et al. 2019	16	12.25	5.0100	10	13.90	5.3000	−0.31	[−1.11; 0.48]	0.1%	0.9%
Schaan et al. 2019	3	13.00	1.7300	5	11.80	3.4900	0.35	[−1.11; 1.80]	0.0%	0.4%
Schaan et al. 2019	8	10.75	8.1000	7	7.14	4.5600	0.51	[−0.53; 1.54]	0.0%	0.6%
Skripkauskaite et al. 2015	275	−2.08	0.4900	207	−2.27	0.6600	0.33	[0.15; 0.51]	1.2%	2.3%
Skripkauskaite et al. 2015	275	−2.13	0.5100	207	−2.27	0.6700	0.24	[0.06; 0.42]	1.3%	2.3%
Teixeira et al. 2015	333	21.26	3.6400	476	21.32	3.5600	−0.02	[−0.16; 0.12]	2.1%	2.4%
Teixeira et al. 2015	333	11.56	2.8700	476	11.13	3.2000	0.14	[0.00; 0.28]	2.1%	2.4%
Fixed effect model	15936			15144			0.00	[−0.02; 0.02]	77.4%	--
Random effects model							0.04	[−0.08; 0.17]	--	68.4%
Heterogeneity: $I^2 = 95\%$, $\tau^2 = 0.1047$, $p < 0.01$										
Fixed effect model	**20109**			**19652**			**−0.05**	**[−0.07; −0.03]**	**100.0%**	**--**
Random effects model							**0.01**	**[−0.09; 0.11]**	**--**	**100.0%**
Prediction interval								**[−0.62; 0.64]**		

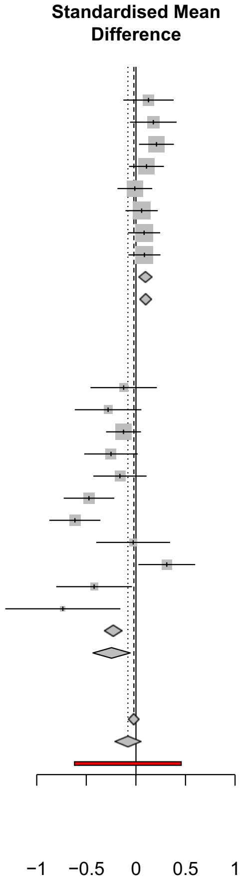
Heterogeneity: $I^2 = 95\%$, $\tau^2 = 0.0960$, $p < 0.01$

Residual heterogeneity: $I^2 = 94\%$, $p < 0.01$

Appendix 6.9: self-regulation

Self−regulation (San)

Study	Boys Total	Boys Mean	Boys SD	Girls Total	Girls Mean	Girls SD	SMD	95%−CI	Weight (fixed)	Weight (random)
Grouping_variable = 0										
Hong et al. 2009	124	2.58	0.6500	116	2.50	0.6100	0.13	[−0.13; 0.38]	4.1%	5.4%
Hong et al. 2009	115	2.47	0.6300	179	2.37	0.5300	0.17	[−0.06; 0.41]	4.7%	5.5%
Lee et al. 2014	246	3.24	0.9400	253	3.05	0.8900	0.21	[0.03; 0.38]	8.4%	6.0%
Lee et al. 2014	246	3.24	0.9500	253	3.14	0.9300	0.11	[−0.07; 0.28]	8.5%	6.0%
Lee et al. 2014	246	3.23	0.9700	253	3.24	0.8900	−0.01	[−0.19; 0.16]	8.5%	6.0%
Liu et al. 2018	305	5.99	2.2200	276	5.86	2.3300	0.06	[−0.11; 0.22]	9.9%	6.1%
Liu et al. 2018	311	6.33	2.1900	275	6.15	2.2100	0.08	[−0.08; 0.24]	9.9%	6.1%
Liu et al. 2018	313	6.15	2.2500	277	5.96	2.2100	0.09	[−0.08; 0.25]	10.0%	6.1%
Fixed effect model	1906			1882			0.10	[0.03; 0.16]	64.0%	−−
Random effects model							0.10	[0.04; 0.15]	−−	47.3%
Heterogeneity: $I^2 = 0\%$, $\tau^2 = 0.0015$, $p = 0.81$										
Grouping_variable = 1										
Hubert et al. 2015	72	47.86	7.9400	66	48.85	7.9400	−0.12	[−0.46; 0.21]	2.3%	4.6%
Hubert et al. 2015	72	24.21	10.8800	66	27.18	10.0600	−0.28	[−0.62; 0.05]	2.3%	4.6%
Lee et al. 2014	246	3.20	0.8900	253	3.31	0.8600	−0.13	[−0.30; 0.05]	8.5%	6.0%
McCoy et al. 2011	116	−30.92	11.7000	99	−28.06	10.8600	−0.25	[−0.52; 0.02]	3.6%	5.2%
McCoy et al. 2011	116	−37.33	12.3800	99	−35.35	12.1500	−0.16	[−0.43; 0.11]	3.6%	5.2%
Storksen et al. 2015	124	30.87	15.5700	119	38.13	14.9700	−0.47	[−0.73; −0.22]	4.0%	5.3%
Storksen et al. 2015	124	4.08	0.9100	119	4.57	0.6500	−0.62	[−0.87; −0.36]	3.9%	5.3%
von et al. 2012	56	13.32	6.1800	55	13.50	6.4800	−0.03	[−0.40; 0.34]	1.9%	4.3%
von et al. 2012	90	27.13	10.8600	100	23.64	11.4700	0.31	[0.02; 0.60]	3.2%	5.1%
von et al. 2012	65	32.27	6.1700	46	34.57	4.1300	−0.42	[−0.80; −0.04]	1.8%	4.2%
Weis et al. 2013	19	3.03	0.8600	34	3.64	0.7900	−0.74	[−1.32; −0.16]	0.8%	2.8%
Fixed effect model	1100			1056			−0.23	[−0.31; −0.14]	36.0%	−−
Random effects model							−0.25	[−0.43; −0.06]	−−	52.7%
Heterogeneity: $I^2 = 70\%$, $\tau^2 = 0.0594$, $p < 0.01$										
Fixed effect model	**3006**			**2938**			**−0.02**	**[−0.07; 0.03]**	**100.0%**	**−−**
Random effects model							**−0.08**	**[−0.21; 0.05]**	**−−**	**100.0%**
Prediction interval								**[−0.62; 0.46]**		



Heterogeneity: $I^2 = 75\%$, $\tau^2 = 0.0611$, $p < 0.01$
Residual heterogeneity: $I^2 = 54\%$, $p < 0.01$