

SUPPLEMENTAL MATERIAL 1. Search strategy/syntax

Last search performed on 05.05.18

PUBMED (MEDLINE)

- Search terms:

(meditation OR mindful OR mindfulness OR mindfulness-based OR vipassana OR zen OR yoga OR yogic OR pranayama OR sudarshan OR qi-gong OR qigong OR chi kung OR kundalini OR chundosunbup OR reiki OR tai chi OR mantra OR kirtane OR samantha OR kriya OR "loving kindness" OR "self compassion" OR "self-compassion" OR dharan OR vajrayana OR samadi OR zaizen OR patanjali OR MSC OR MBCT OR MBSR OR dhyani OR "acceptance and commitment therapy" OR acceptance commitment therapy) AND (ADHD OR attention deficit OR attention-deficit OR hyperkinetic syndrome OR hyperkinetic disorder) AND (randomly OR randomized OR randomised)

Limits: **none**

OVID databases

PsycInfo, EMBASE+EMBASE classic, OVID Medline

Search terms:

(meditation OR mindful OR mindfulness OR mindfulness-based OR vipassana OR zen OR yoga OR yogic OR pranayama OR sudarshan OR qi-gong OR qigong OR chi kung OR kundalini OR chundosunbup OR reiki OR tai chi OR mantra OR kirtane OR samantha OR kriya OR "loving kindness" OR "self compassion" OR "self-compassion" OR dharan OR vajrayana OR samadi OR zaizen OR patanjali OR MSC OR MBCT OR MBSR OR dhyani OR "acceptance and commitment therapy" OR acceptance commitment therapy) AND (ADHD OR attention deficit OR attention-deficit OR hyperkinetic syndrome OR hyperkinetic disorder) AND (randomly OR randomized OR randomised)

Limits: **none**

WEB OF KNOWLEDGE

(Web of science (science citation index expanded), Biological abstracts, Biosis, Food science and technology abstracts)

Search terms:

meditation OR mindful OR mindfulness OR mindfulness-based OR vipassana OR zen OR yoga OR yogic OR pranayama OR sudarshan OR qi-gong OR qigong OR chi kung OR kundalini OR chundosunbup OR reiki OR tai chi OR mantra OR kirtane OR samantha OR kriya OR "loving kindness" OR "self compassion" OR "self-compassion" OR dharan OR vajrayana OR samadi OR zaizen OR patanjali OR MSC OR MBCT OR MBSR OR dhyani OR "acceptance and commitment therapy" OR acceptance commitment therapy

ADHD OR attention deficit OR attention-deficit OR hyperkinetic syndrome OR hyperkinetic disorder

randomly OR randomized OR randomised

Limits: **none**

SUPPLEMENTAL MATERIAL 2. References excluded after reading the full text, with reason.

Author(year)	reasons
Behbahani M, Zargar F. Effectiveness of mindful parenting training on clinical symptoms and self-efficacy in children with attention deficit hyperactivity disorder. [Persian]. <i>Journal of Isfahan Medical School</i> 2017;35(429):511-17.	Authors contacted but not able to provide requested data
Beik M, Nezakatalhoseini M, Abedi A, et al. The effect of yoga training on cognitive-motor functions in children with attention deficit-Hyperactivity disorder. <i>Advances in Cognitive Science</i> 2015;17(2[66]; 66):56-67.	Authors contacted but not able to provide requested data
Cohen SCL, Harvey DJ, Shields RH, et al. Effects of Yoga on Attention, Impulsivity, and Hyperactivity in Preschool-Aged Children with Attention-Deficit Hyperactivity Disorder Symptoms. <i>Journal of developmental and behavioral pediatrics : JDBP</i> 2018;39(3):200-09. doi: 10.1097/dbp.0000000000000552 [published Online First: 2018/03/15]	Authors contacted but not able to provide requested data
Dehkordian P, Hamid N, Beshlideh K, et al. The Effectiveness of Mindful Parenting, Social Thinking and Exercise on Quality of Life in ADHD Children. <i>International Journal of Pediatrics-Mashhad</i> 2017;5(2):4295-302. doi: 10.22038/ijp.2016.7900	Outcome measures of interest not provided
Ghorbani M, Khalilian R. Effects of mindfulness training on working memory and behavioral inhibition for adults with attention deficit / hyperactivity. <i>Advances in Cognitive Science</i> 2016;18(3[71]; 71):90-100.	Authors contacted but not able to provide requested data
Janssen, L., Kan, C. C., Carpentier, P. J., Sizoo, B., Hepark, S., Grutters, J., . . . Speckens, A. E. (2015). Mindfulness based cognitive therapy versus treatment as usual in adults with attention deficit hyperactivity disorder (ADHD). <i>BMC Psychiatry</i> , 15, 216. doi:10.1186/s12888-015-0591-x	Just a protocol
Jernelov S, Larsson Y, Llenas M, et al. Better sleep in psychiatric care; a pilot study of a behavioral treatment for insomnia in ADHD. <i>Sleep Medicine</i> 2017;40 (Supplement 1):e150.	Not RCT
Lee B, 계홍경, 오산산, et al. Effects of Tai Chi on Attention and Dynamic Balance in Children and Adolescent with ADHD. <i>Journal of adapted physical activity and exercise</i> 2015;23(3):1-11.	Authors contacted but not able to provide requested data
Meppelink R, de Bruin EI, Bogels SM. Meditation or Medication? Mindfulness training versus medication in the treatment of childhood ADHD: a randomized controlled trial. <i>BMC psychiatry</i> 2016;16:267. doi: 10.1186/s12888-016-0978-3 [published Online First: 2016/07/28]	Authors contacted but not able to provide requested data
Rice, V. J., Liu, B., Schroeder, P. J. (2018). Impact of in-person and virtual world mindfulness training on symptoms of post-traumatic stress disorder and attention deficit and hyperactivity disorder. <i>Military Medicine</i> , 183(Supplement 1), 413-20. doi: 10.1093/milmed/usx227	No RCT

SUPPLEMENTAL MATERIAL 3. List of studies included in the meta-analysis.

Fleming (2015)

- Fleming AP, McMahon RJ, Moran LR, et al. Pilot randomized controlled trial of dialectical behavior therapy group skills training for ADHD among college students. *Journal of attention disorders* 2015;19(3):260-71. doi: 10.1177/1087054714535951 [published Online First: 2014/05/31]

Gershby (2017)

- Gershby N, Meehan KB, Omer H, et al. Randomized clinical trial of mindfulness skills augmentation in parent training. *Child & Youth Care Forum* 2017;46(6):783-803. doi: <http://dx.doi.org/10.1007/s10566-017-9411-4>

Gu (2018)

- Gu Y, Xu G, Zhu Y. A Randomized Controlled Trial of Mindfulness-Based Cognitive Therapy for College Students With ADHD. *Journal of attention disorders* 2018;22(4):388-99. doi: 10.1177/1087054716686183 [published Online First: 2017/01/01]

Haffner (2006)

- Haffner J, Roos J, Goldstein N, et al. The effectiveness of body-oriented methods of therapy in the treatment of attention-deficit hyperactivity disorder (ADHD): Results of a controlled pilot study. [German]. *Zeitschrift fur Kinder- und Jugendpsychiatrie und Psychotherapie* 2006;34(1):37-47. doi: <http://dx.doi.org/10.1024/1422-4917.34.1.37>

Hoxhaj (2018)

- Hoxhaj E, Sadohara C, Borel P, et al. Mindfulness vs psychoeducation in adult ADHD: a randomized controlled trial. *European archives of psychiatry and clinical neuroscience* 2018 doi: 10.1007/s00406-018-0868-4 [published Online First: 2018/01/23]
- Bachmann K, Lam AP, Soros P, et al. Effects of mindfulness and psychoeducation on working memory in adult ADHD: A randomised, controlled fMRI study. *Behaviour research and therapy* 2018;106:47-56. doi: 10.1016/j.brat.2018.05.002
- Bachmann K, Soros P, Lam AP, et al. Differences in brain activation after mindfulness training in adults with ADHD: A fMRI study. *ADHD Attention Deficit and Hyperactivity Disorders* 2017;9 (1 Supplement):S29. doi: <http://dx.doi.org/10.1007/s12402-017-0224-y1>

Janssen (2018)

- Janssen L, Kan CC, Carpentier PJ, et al. Mindfulness-based cognitive therapy v. Treatment as usual in adults with adhd: A multicentre, single-blind, randomised controlled trial. *Psychological Medicine* 2018;No Pagination Specified. doi: <http://dx.doi.org/10.1017/S003329171800042915>.
- Heparik S, Janssen L, de Vries A, et al. The Efficacy of Adapted MBCT on Core Symptoms and Executive Functioning in Adults With ADHD: A Preliminary Randomized Controlled Trial. *Journal of attention disorders* 2015 doi: 10.1177/1087054715613587 [published Online First: 2015/11/22]
- Schoenberg PL, Heparik S, Kan CC, et al. Effects of mindfulness-based cognitive therapy on neurophysiological correlates of performance monitoring in adult attention-deficit/hyperactivity disorder. *Clinical neurophysiology : official journal of the International Federation of Clinical Neurophysiology* 2014;125(7):1407-16. doi:

10.1016/j.clinph.2013.11.031 [published Online First: 2014/01/01]

Jensen (2004)

- Jensen PS, Kenny DT. The effects of yoga on the attention and behavior of boys with Attention-Deficit/ hyperactivity Disorder (ADHD). *Journal of attention disorders* 2004;7(4):205-16. doi: 10.1177/108705470400700403 [published Online First: 2004/10/19]

Kiani (2017)

- Kiani B, Hadianfard H, Mitchell JT. The impact of mindfulness meditation training on executive functions and emotion dysregulation in an Iranian sample of female adolescents with elevated attention-deficit/hyperactivity disorder symptoms. *Australian Journal of Psychology* 2017;69(4):273-82. doi: <http://dx.doi.org/10.1111/ajpy.12148>

Kim (2014)

- Kim K-U, 김수한, 최윤희. The Effect of Hatha yoga and Physical Activity on the attention of children and adolescents with ADHD tendencies. *Journal of Korea Entertainment Industry Association* 2014;8(3):527-37.

Lo (2017)

- Lo HHM, Wong SWL, Wong JYH, et al. The Effects of Family-Based Mindfulness Intervention on ADHD Symptomology in Young Children and Their Parents: A Randomized Control Trial. *Journal of attention disorders* 2017:1087054717743330. doi: 10.1177/1087054717743330 [published Online First: 2017/12/01]

Mitchell (2017)

- Mitchell JT, McIntyre EM, English JS, et al. A Pilot Trial of Mindfulness Meditation Training for ADHD in Adulthood: Impact on Core Symptoms, Executive Functioning, and Emotion Dysregulation. *Journal of attention disorders* 2017;21(13):1105-20. doi: 10.1177/1087054713513328 [published Online First: 2013/12/07]

Pettersson (2017)

- Pettersson R, Soderstrom S, Edlund-Soderstrom K, et al. Internet-Based Cognitive Behavioral Therapy for Adults With ADHD in Outpatient Psychiatric Care. *Journal of attention disorders* 2017;21(6):508-21. doi: 10.1177/1087054714539998 [published Online First: 2014/06/28]

Sidhu (2015)

- Sidhu P. The efficacy of mindfulness meditation in increasing the attention span in children with ADHD. *Dissertation Abstracts International: Section B: The Sciences and Engineering* 2015;75(7-B(E)):No Pagination Specified.

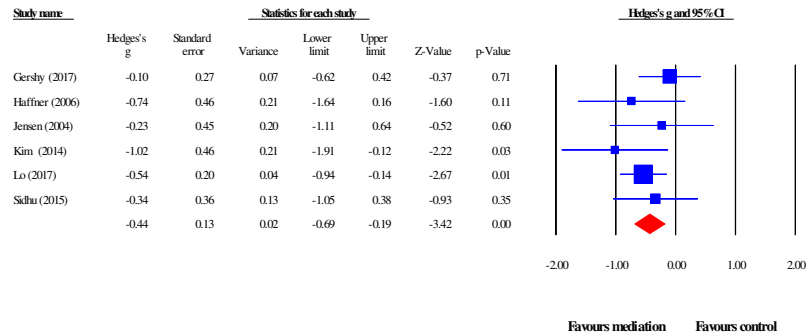
SUPPLEMENTAL MATERIAL 4. Risk of bias for each of the studies included in the meta-analysis.

Study	FLEMING 2015	GERSHY 2017	GU 2018	HAFFNER 2006	HOXHAIJ 2018 BACHMANN 2018 BACHMANN 2017	JANSSEN 2018 HEPARK 2015 SCHOENBERG 2014
Random seq. generation	Unclear	LOW	Unclear	LOW	LOW	LOW
Allocation concealment	Unclear	Unclear	Unclear	Unclear	Unclear	LOW
Blind part	Unclear	Unclear	High	Unclear	Low	High
Blind out ass	Low	Unclear	Low	Unclear	Low	LOW
Incomplete outcome data	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear
Selective reporting	Unclear	Unclear	Unclear	Unclear	Unclear	Low
Other bias	LOW	LOW	LOW	Unclear	LOW	LOW

Study	JENSEN 2004	KIANI 2017	KIM 2014	LO 2017	MITCHELL 2017	PETTERSON 2017	SIDHU 2015
Random seq. generation	Unclear	Unclear	Unclear	LOW	Unclear	LOW	Unclear
Allocation concealment	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear	Unclear
Blind part	Unclear	High	High	High	High	High	Unclear
Blind out ass	Unclear	Unclear	Unclear	Unclear	High	Low	Unclear
Incomplete outcome data	Unclear	LOW	LOW	Unclear	Unclear	Unclear	Unclear
Selective reporting	Unclear	Unclear	Unclear	Low	Unclear	Unclear	Unclear
Other bias	Unclear	Unclear	LOW	LOW	LOW	LOW	LOW

SUPPLEMENTAL MATERIAL 5. Forest plots.

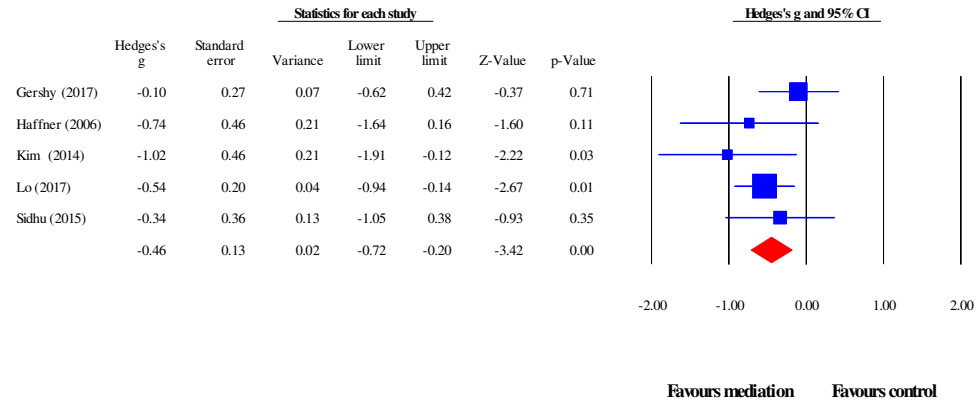
1. ADHD symptoms COMBINED OR inattention OR hyperactivity/ impulsivity (children)



Egger's regression intercept

Intercept	-0.607
Standard error	1.254
95% lower limit(2-tailed)	-4.088
95% upper limit(2-tailed)	2.874
t-value	0.484
df	4
P-value(1-tailed)	0.327
P-value(2-tailed)	0.654

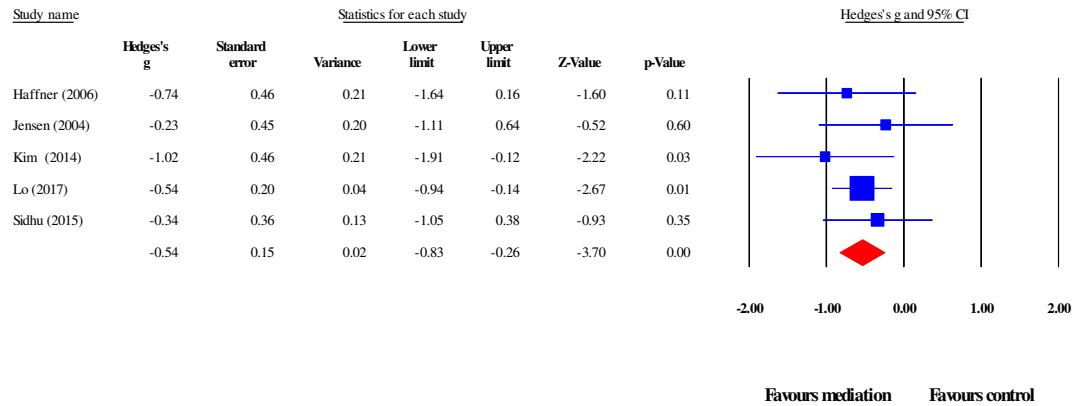
2. ADHD symptoms COMBINED OR inattention OR hyperactivity/ impulsivity (children, removing Jensen 2004)



Egger's regression intercept

Intercept	-1.083
Standard error	1.483
95% lower limit(2-tailed)	-5.803
95% upper limit(2-tailed)	3.637
t-value	0.730
df	3
P-value(1-tailed)	0.259
P-value(2-tailed)	0.518

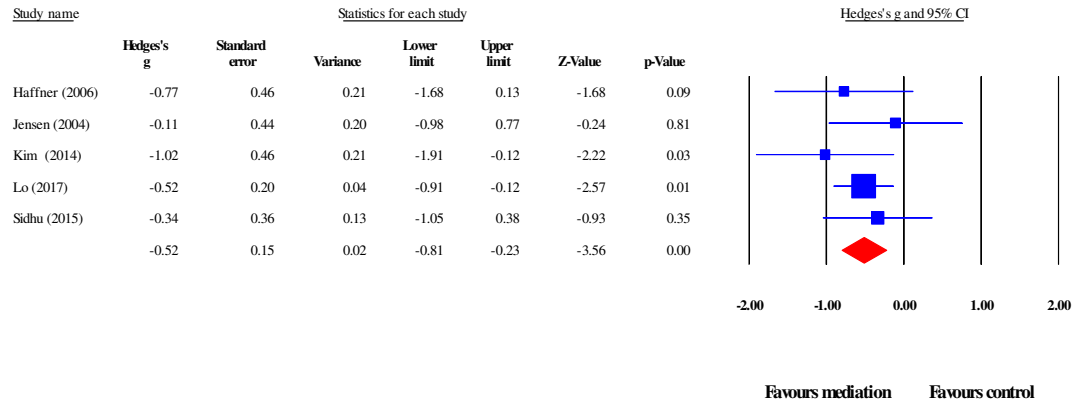
3. ADHD symptoms COMBINED OR inattention OR hyperactivity/ impulsivity (children, removing Gershy 2017)



Egger's regression intercept

Intercept	-0.306
Standard error	1.045
95% lower limit(2-tailed)	-3.633
95% upper limit(2-tailed)	3.021
t-value	0.292
df	3
P-value(1-tailed)	0.394
P-value(2-tailed)	0.788

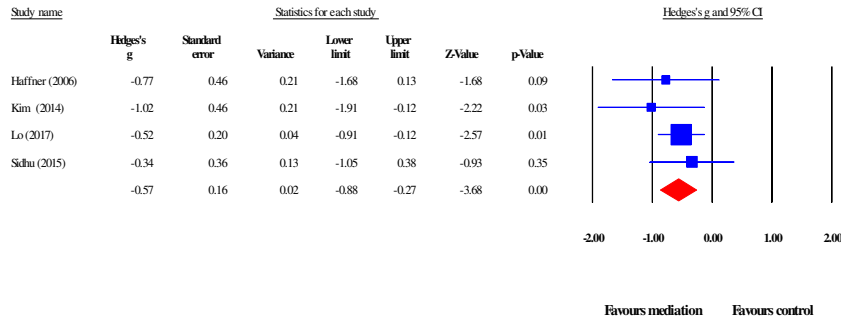
4. Inattention (children)



Egger's regression intercept

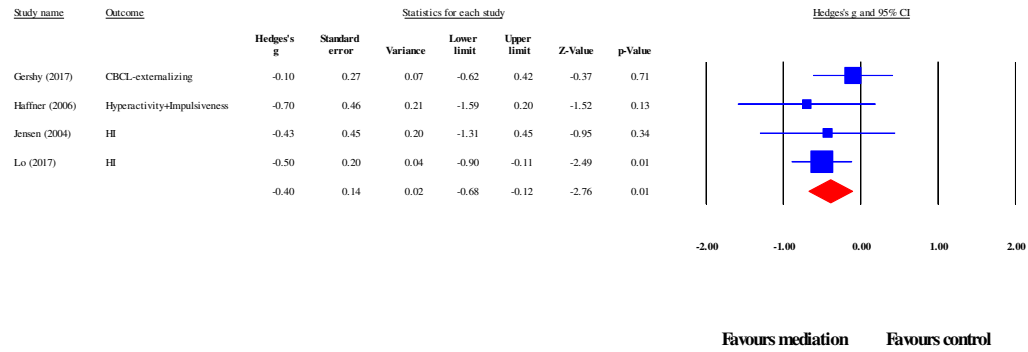
Intercept	-0.294
Standard error	1.179
95% lower limit(2-tailed)	-4.047
95% upper limit(2-tailed)	3.458
t-value	0.250
df	3
P-value(1-tailed)	0.409
P-value(2-tailed)	0.818

5. Inattention (children, removing Jensen 2004)



Egger's regression intercept
 Intercept -1.002
 Standard error 1.053
 95% lower limit(2-tailed) -5.532
 95% upper limit(2-tailed) 3.528
 t-value 0.951
 df 2
 P-value(1-tailed) 0.221
 P-value(2-tailed) 0.442

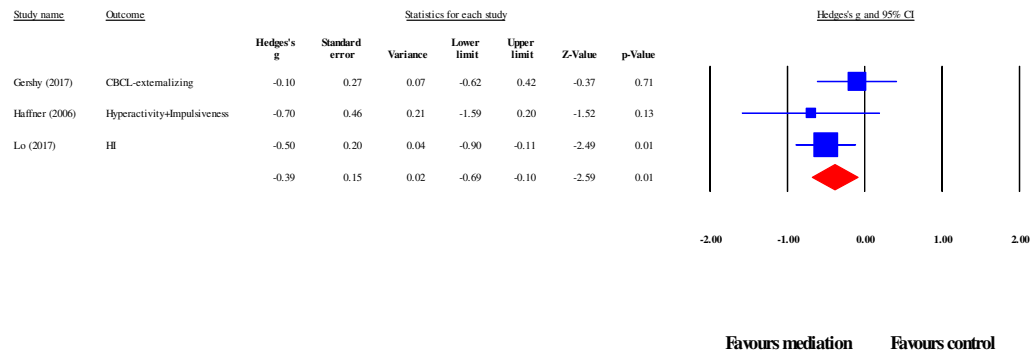
6. Hyperactivity/impulsivity (children)



Egger's regression intercept

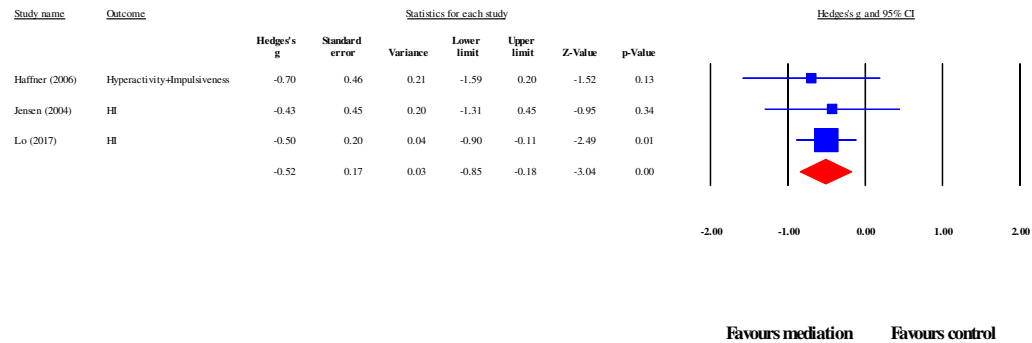
Intercept	-0.300
Standard error	1.469
95% lower limit(2-tailed)	-6.622
95% upper limit(2-tailed)	6.022
t-value	0.204
df	2
P-value(1-tailed)	0.428
P-value(2-tailed)	0.857

7. Hyperactivity/impulsivity (children, removing Jensen 2004)



Egger's regression intercept	
Intercept	-0.381
Standard error	2.670
95% lower limit(2-tailed)	-34.308
95% upper limit(2-tailed)	33.546
t-value	0.142
df	1
P-value(1-tailed)	0.454
P-value(2-tailed)	0.909

8. Hyperactivity/impulsivity (children, removing Gershly 2017)

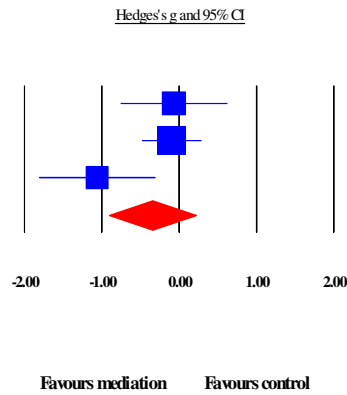


Egger's regression intercept

Intercept	-0.238
Standard error	0.622
95% lower limit(2-tailed)	-8.153
95% upper limit(2-tailed)	7.675
t-value	0.382
df	1
P-value(1-tailed)	0.383
P-value(2-tailed)	0.767

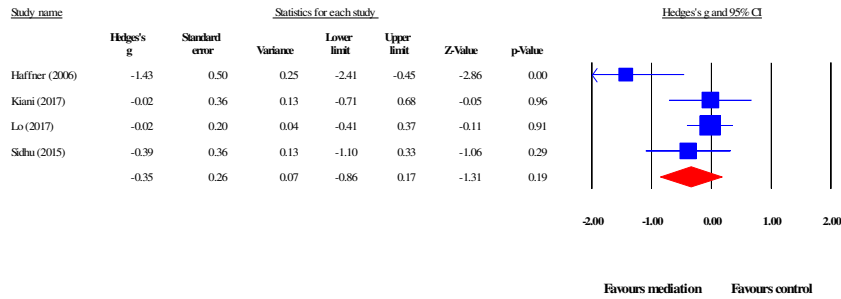
9. Neuropsychological measures of inhibition (children)

Study name	Statistics for each study						
	Hedges's g	Standard error	Variance	Lower limit	Upper limit	Z-Value	p-Value
Kiani (2017)	-0.07	0.36	0.13	-0.76	0.63	-0.19	0.85
Lo (2017)	-0.10	0.20	0.04	-0.49	0.29	-0.48	0.63
Sidhu (2015)	-1.06	0.39	0.15	-1.82	-0.30	-2.74	0.01
	-0.35	0.29	0.08	-0.91	0.21	-1.22	0.22



Egger's regression intercept
 Intercept -2.857
 Standard error 3.297
 95% lower limit(2-tailed) -44.751
 95% upper limit(2-tailed) 339.035
 t-value 0.867
 df 1
 P-value(1-tailed) 0.272
 P-value(2-tailed) 0.545

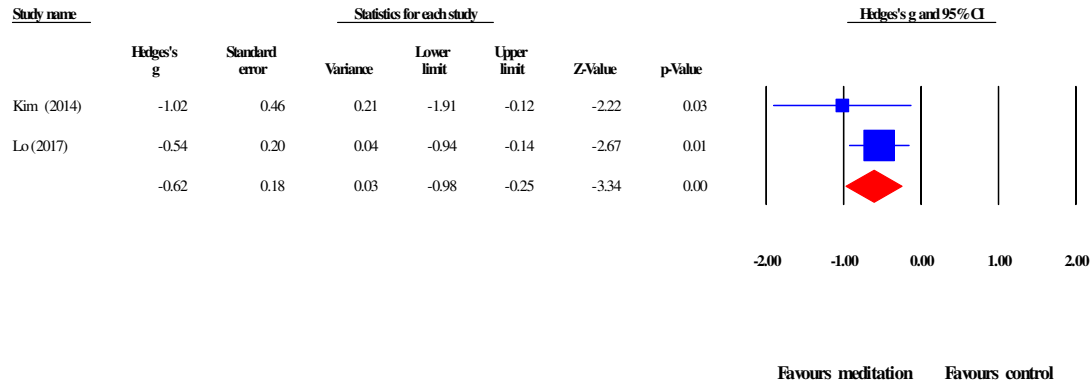
10. Neuropsychological measures of inattention (children)



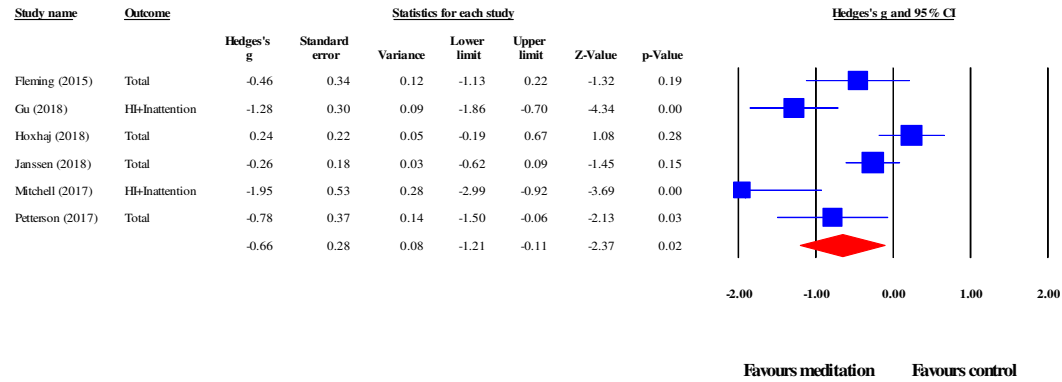
Egger's regression intercept

Intercept	-3.160
Standard error	1.725
95% lower limit(2-tailed)	-10.581
95% upper limit(2-tailed)	4.260
t-value	1.832
df	2
P-value(1-tailed)	0.104
P-value(2-tailed)	0.208

11. ADHD symptoms COMBINED OR inattention OR hyperactivity/ impulsivity (children, studies with with waiting list only)

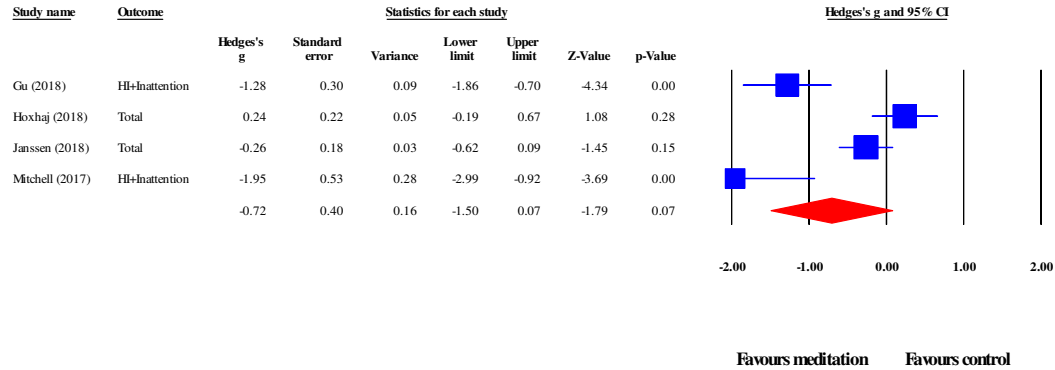


12. ADHD symptoms COMBINED OR inattention OR hyperactivity/ impulsivity (adults)



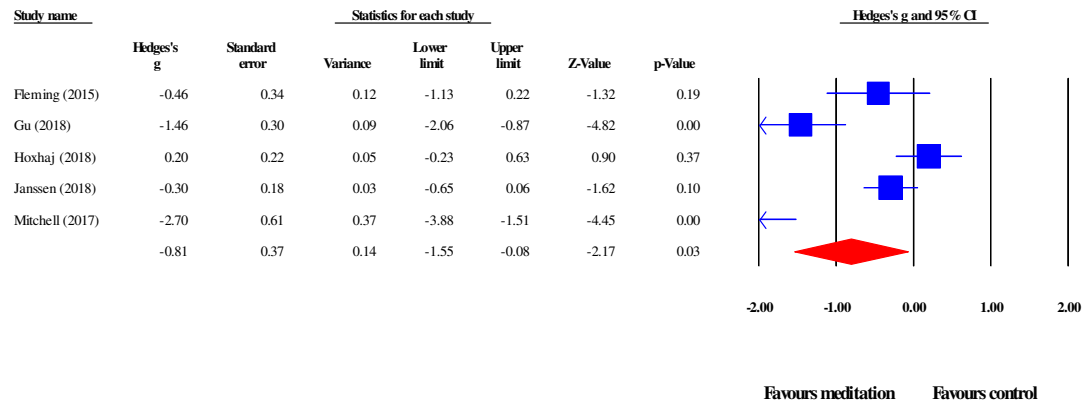
Egger's regression intercept
 Intercept -4.793
 Standard error 2.261
 95% lower limit(2-tailed) -11.071
 95% upper limit(2-tailed) 1.484
 t-value 2.120
 df 4
 P-value(1-tailed) 0.050
 P-value(2-tailed) 0.101

13. ADHD symptoms COMBINED OR inattention OR hyperactivity/ impulsivity (adults, removing Fleming 2015 and Petterson 2017)



Egger's regression intercept	
Intercept	-6.012
Standard error	3.457
95% lower limit(2-tailed)	-20.888
95% upper limit(2-tailed)	8.863
t-value	1.739
df	2
P-value(1-tailed)	0.112
P-value(2-tailed)	0.224

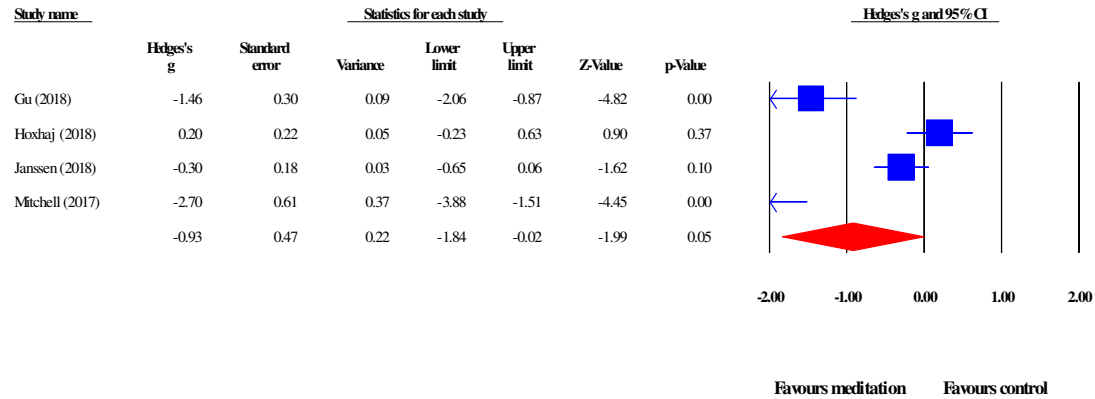
14. Inattention (adults)



Egger's regression intercept

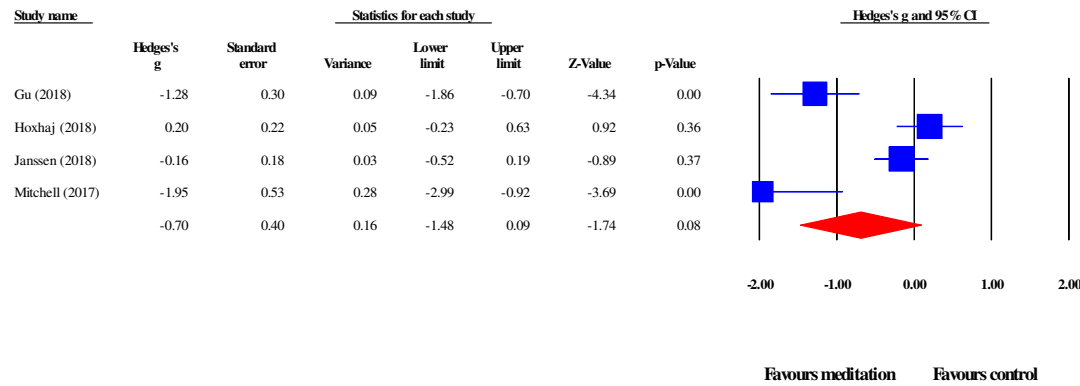
Intercept	-5.734
Standard error	2.813
95% lower limit(2-tailed)	-14.687
95% upper limit(2-tailed)	3.217
t-value	2.038
df	3
P-value(1-tailed)	0.067
P-value(2-tailed)	0.134

15. Inattention (adults, removing Fleming 2015)



Egger's regression intercept
 Intercept -6.739
 Standard error 3.272
 95% lower limit(2-tailed) -20.819
 95% upper limit(2-tailed) 7.340
 t-value 2.059
 df 2
 P-value(1-tailed) 0.087
 P-value(2-tailed) 0.175

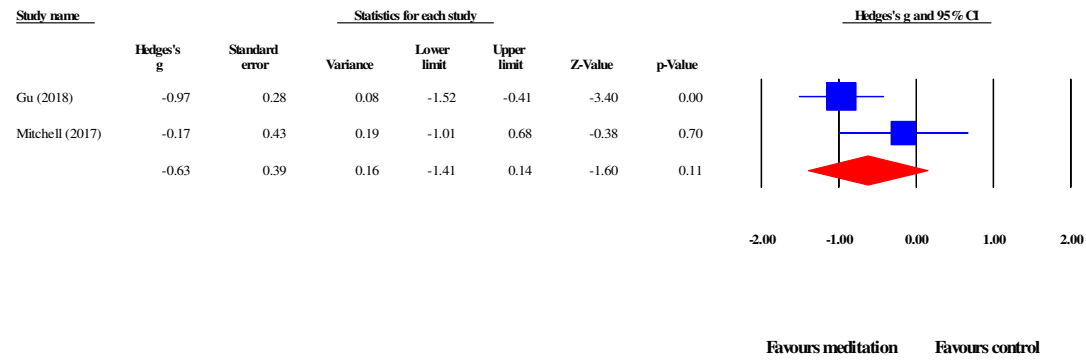
16. Hyperactivity/impulsivity (adults)



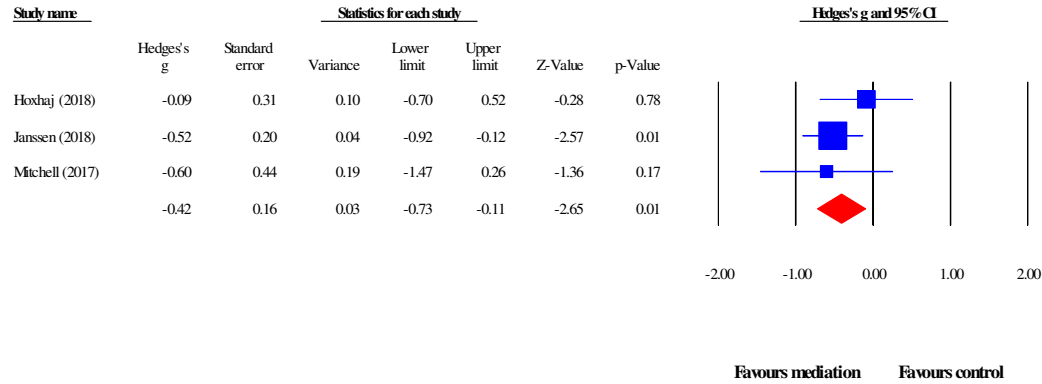
Egger's regression intercept

Intercept	-6.329
Standard error	3.149
95% lower limit(2-tailed)	-19.880
95% upper limit(2-tailed)	7.220
t-value	2.009
df	2
P-value(1-tailed)	0.091
P-value(2-tailed)	0.182

18. Neuropsychological measures of inattention (adults)



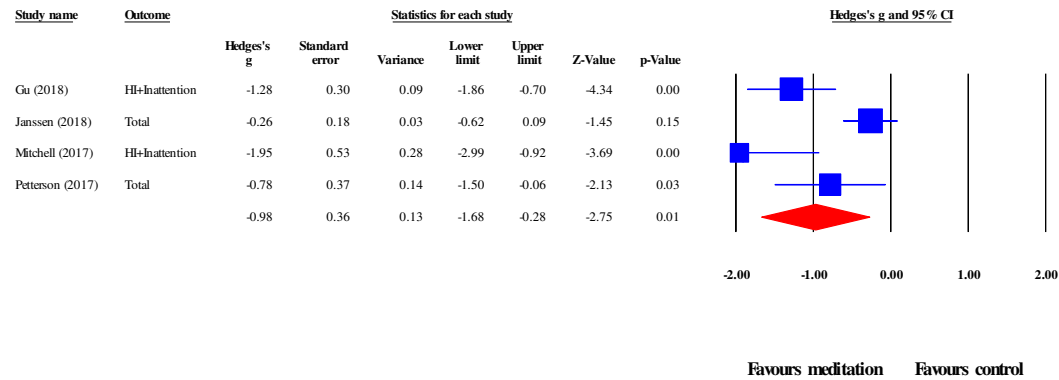
19. Neuropsychological measures of working memory (adults)



Egger's regression intercept

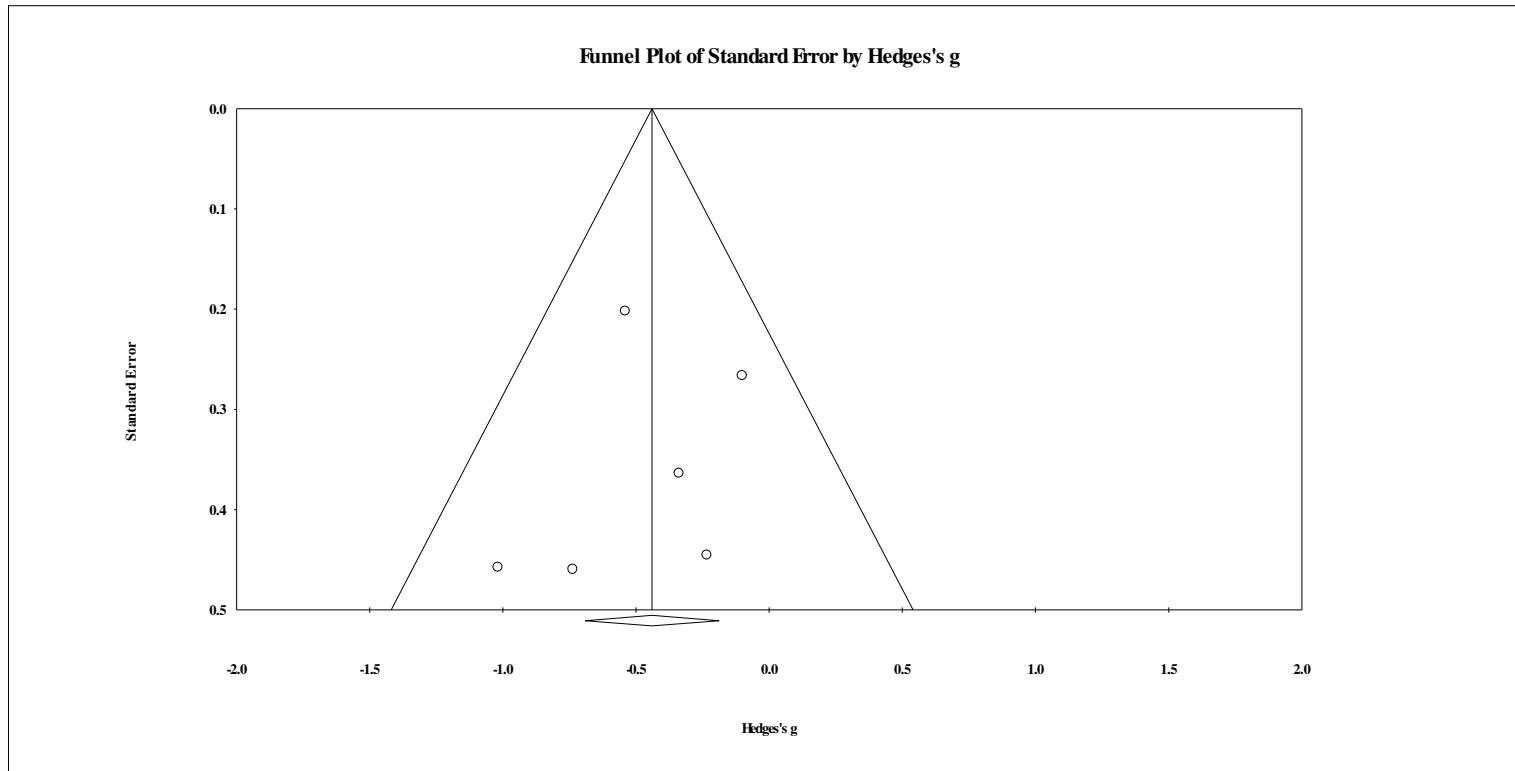
Intercept	0.531
Standard error	2.316
95% lower limit(2-tailed)	-28.897
95% upper limit(2-tailed)	29.958
t-value	0.229
df	1
P-value(1-tailed)	0.428
P-value(2-tailed)	0.857

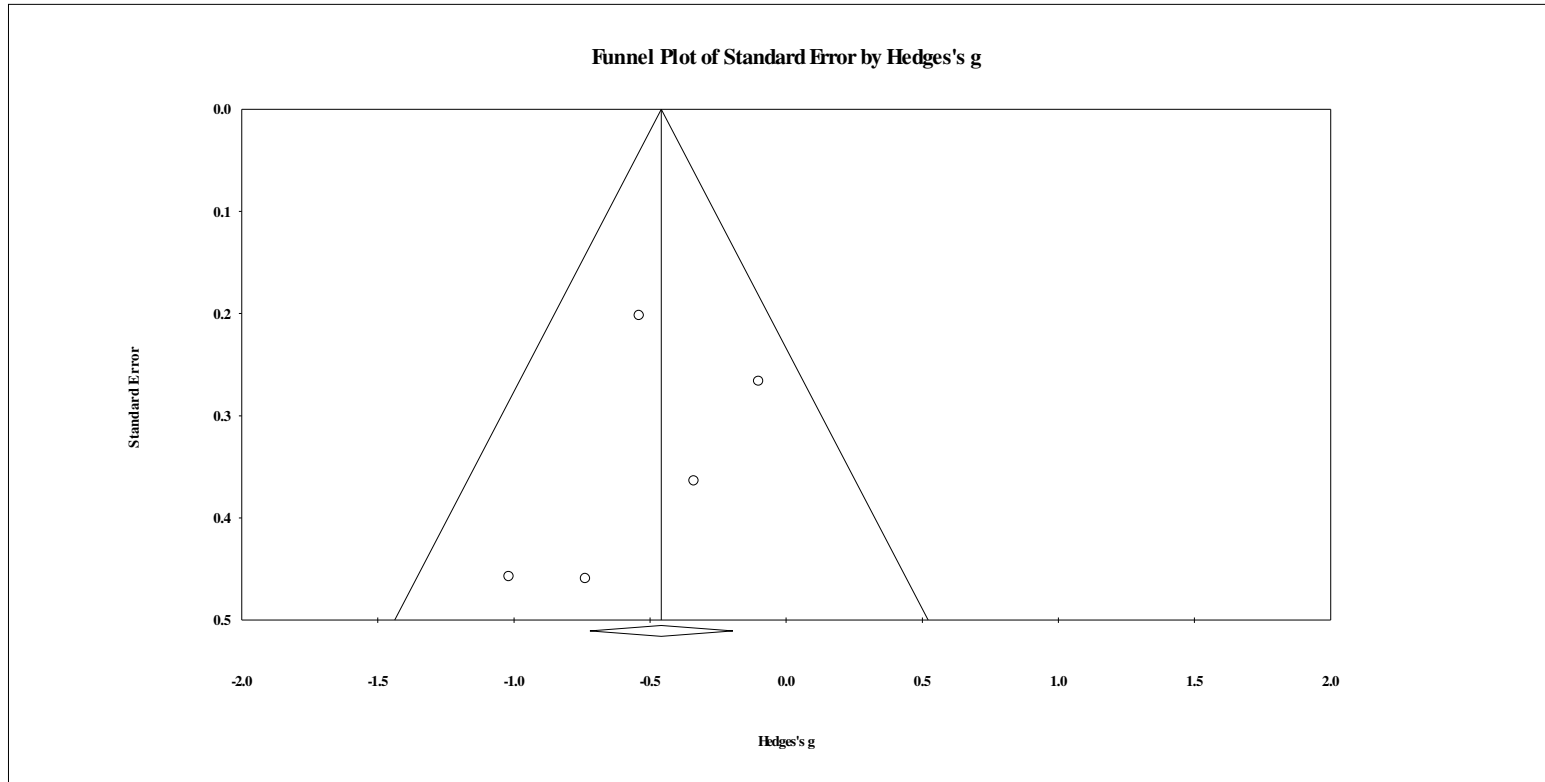
20. ADHD symptoms COMBINED OR inattention OR hyperactivity/ impulsivity (adults, studies with waiting list only)



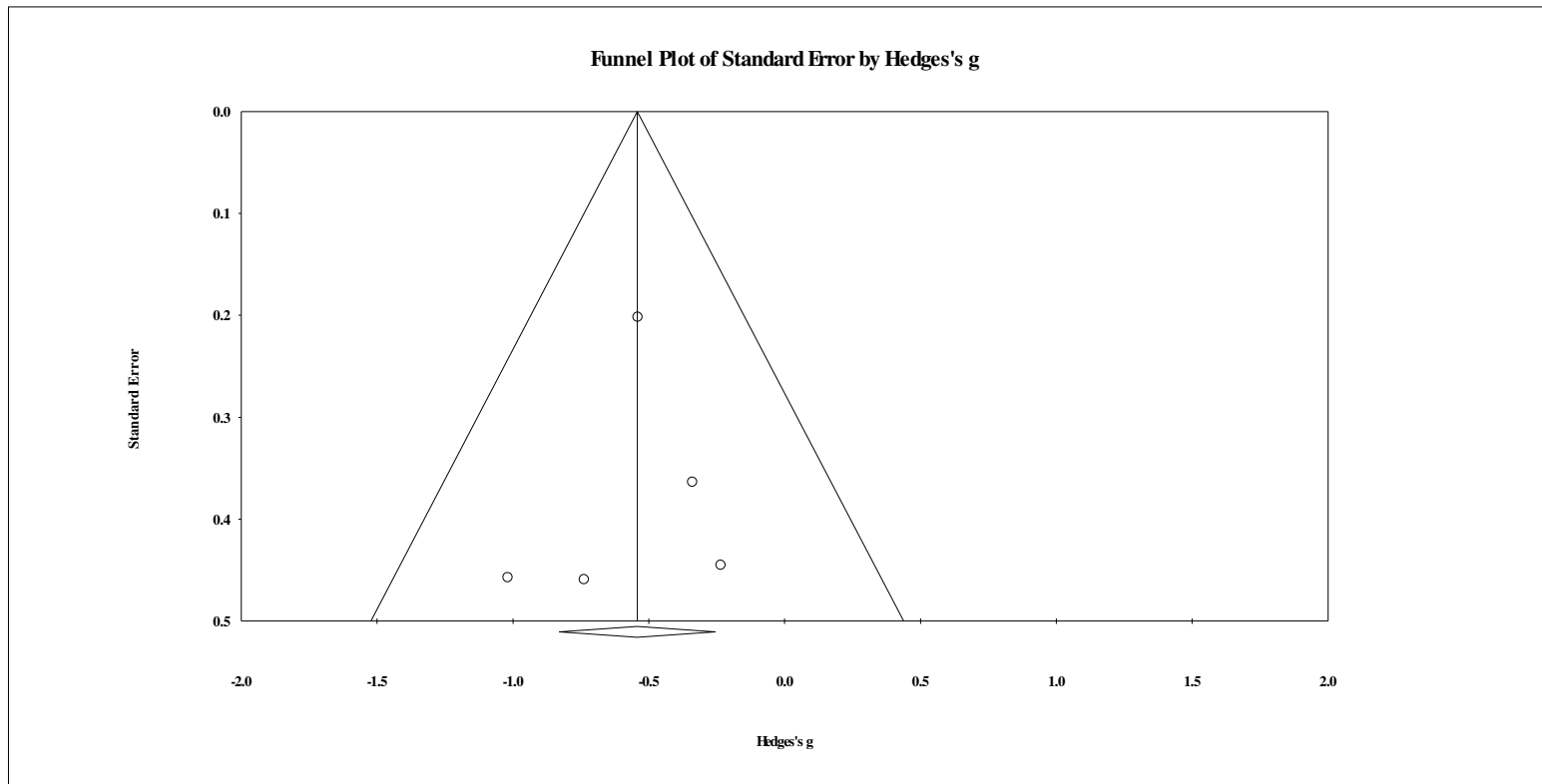
Egger's regression intercept

Intercept	-4.663
Standard error	1.786
95% lower limit(2-tailed)	-12.350
95% upper limit(2-tailed)	3.023
t-value	2.610
df	2
P-value(1-tailed)	0.060
P-value(2-tailed)	0.120

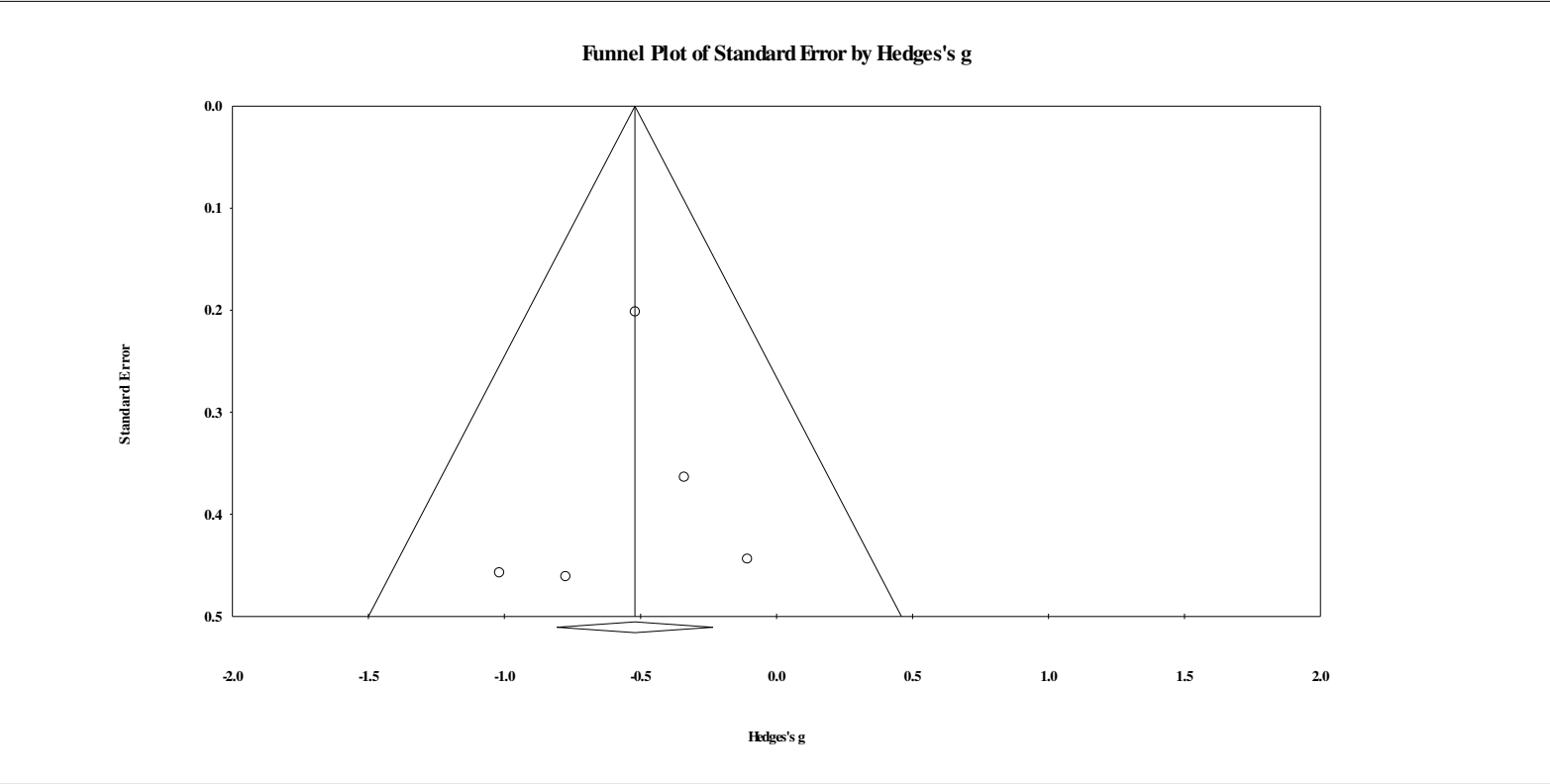
SUPPLEMENTAL MATERIAL 6. Funnel plots**1. ADHD symptoms COMBINED OR inattention OR hyperactivity/ impulsivity (children)**

2. ADHD symptoms COMBINED OR inattention OR hyperactivity/ impulsivity (children, removing Jensen 2004)

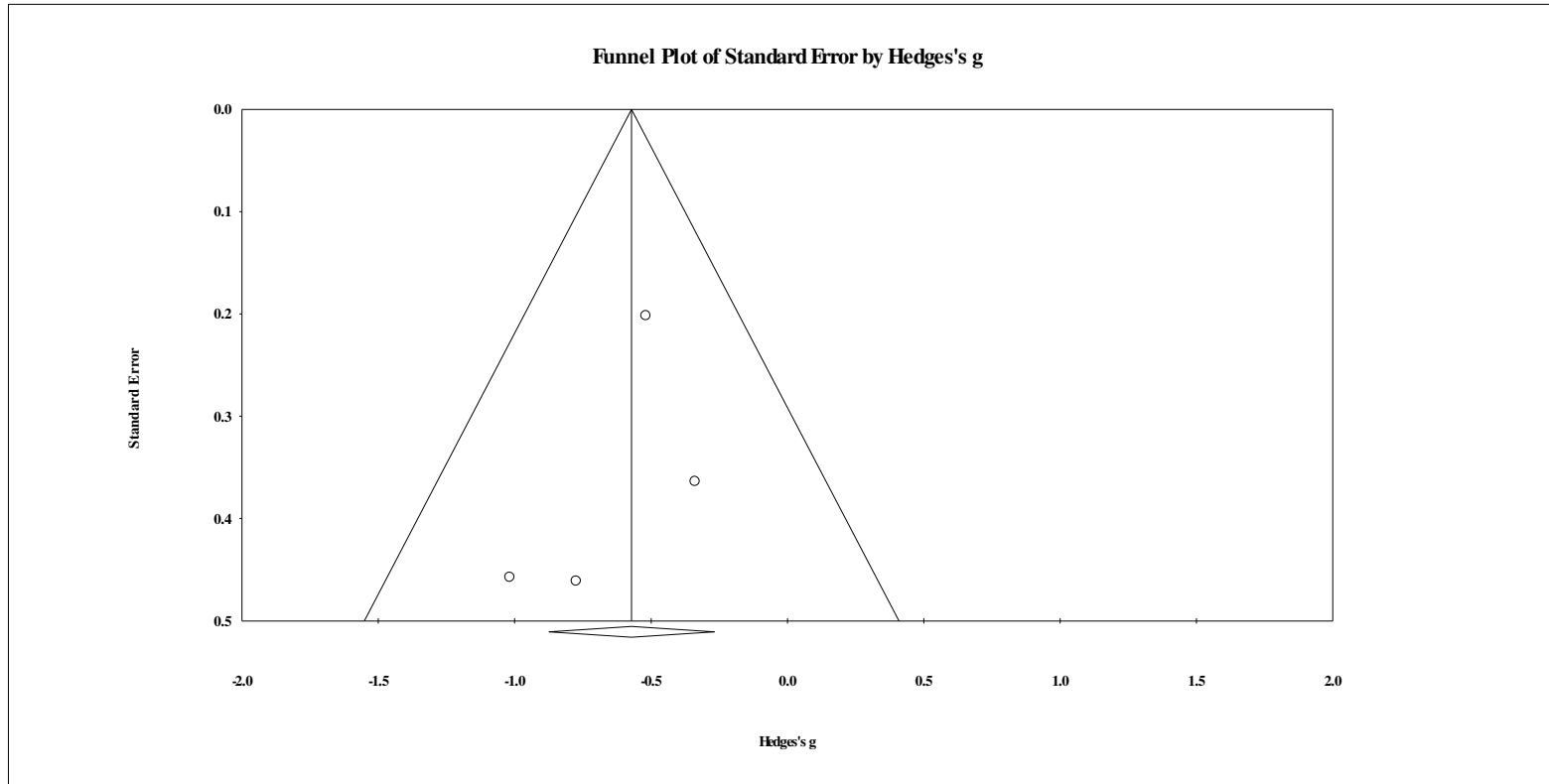
3. ADHD symptoms COMBINED OR inattention OR hyperactivity/ impulsivity (children, removing Gershy 2017)



4. Inattention (children)



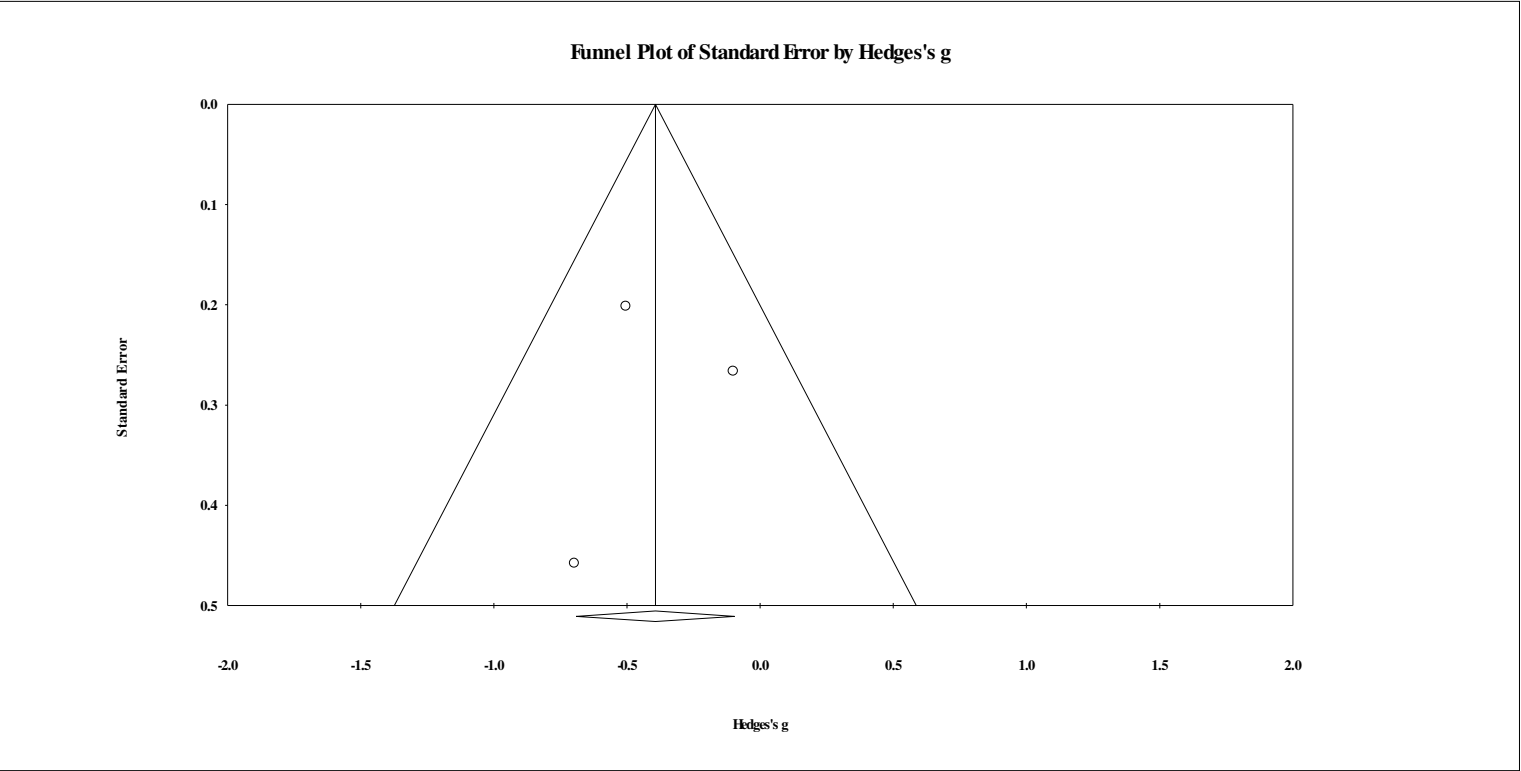
5. Inattention (children, removing Jensen 2004)



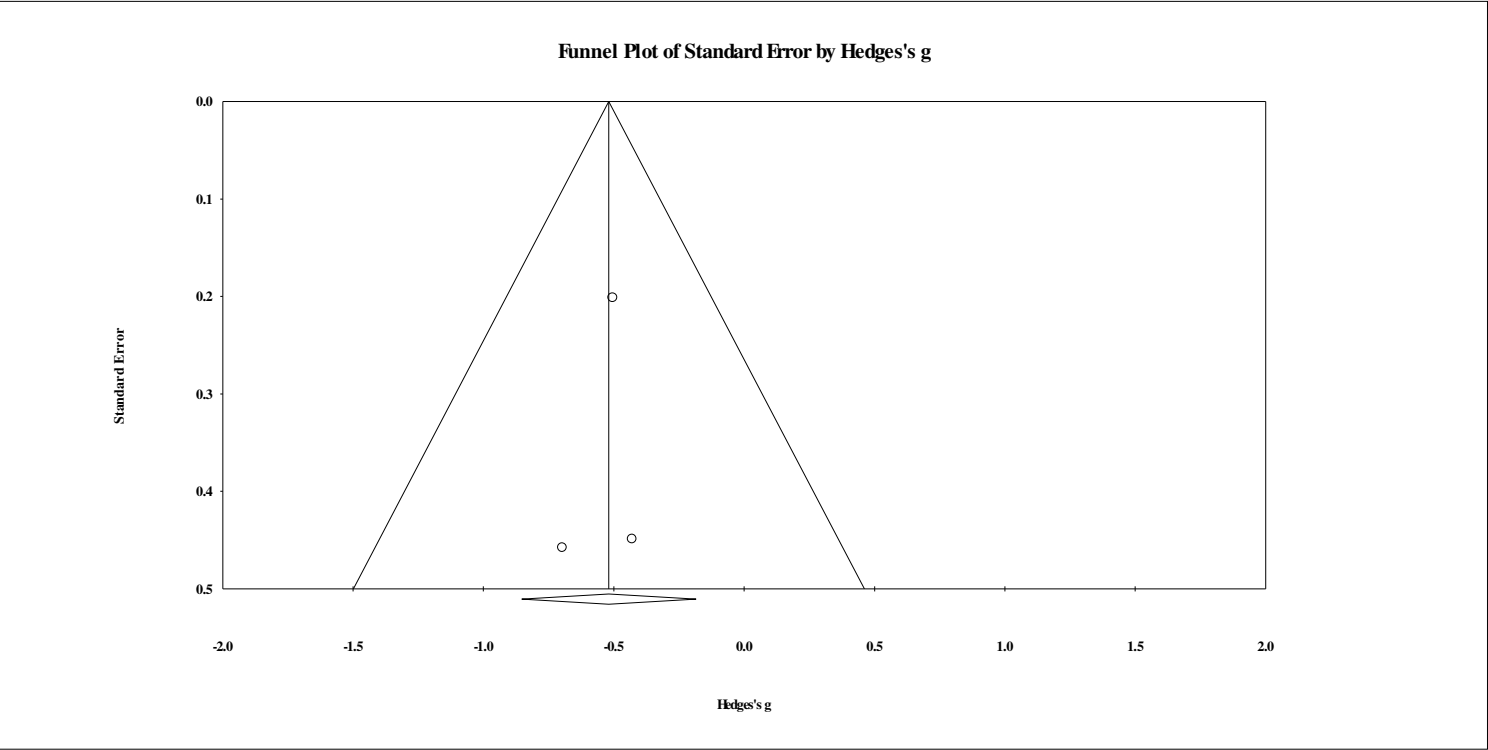
6. Hyperactivity/impulsivity (children)



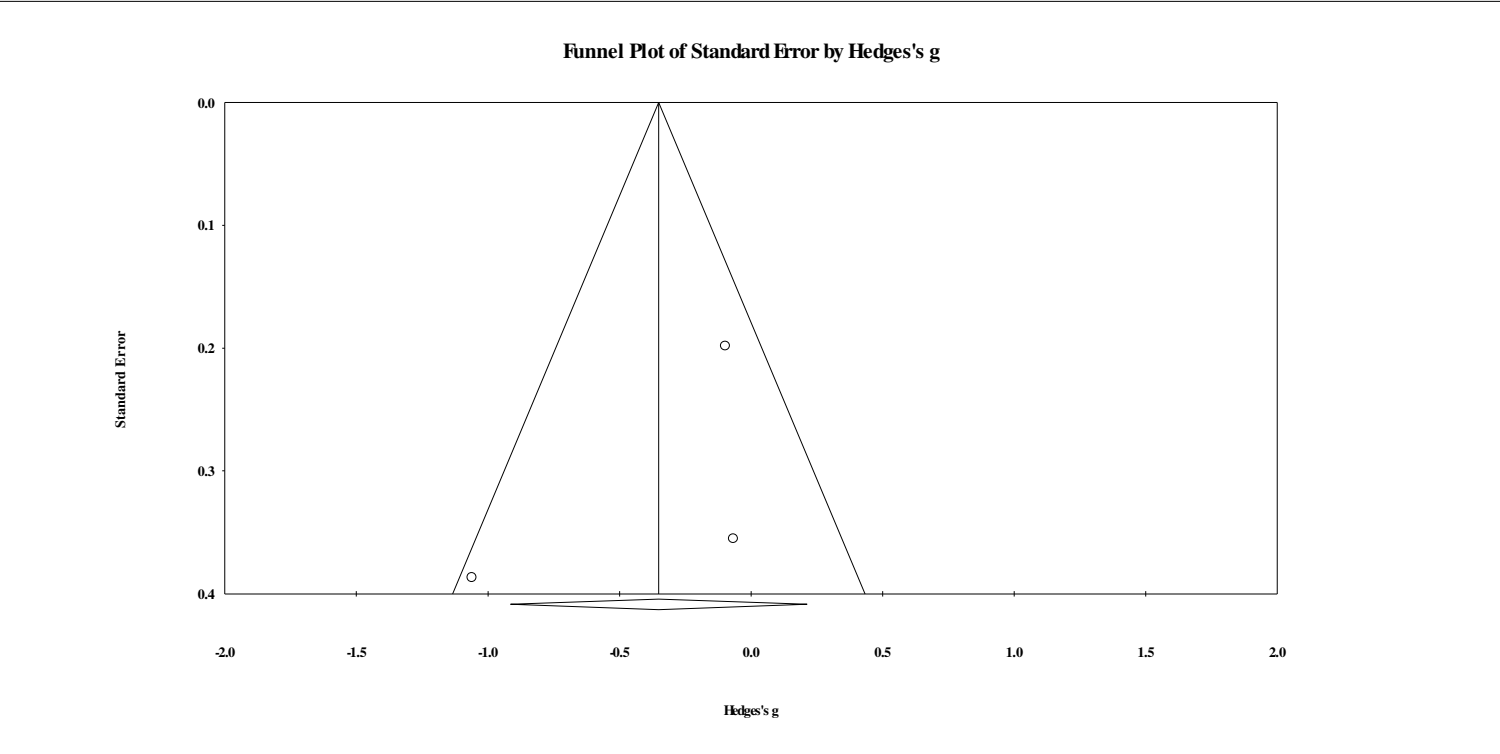
7. Hyperactivity/impulsivity (children, removing Jensen 2004)



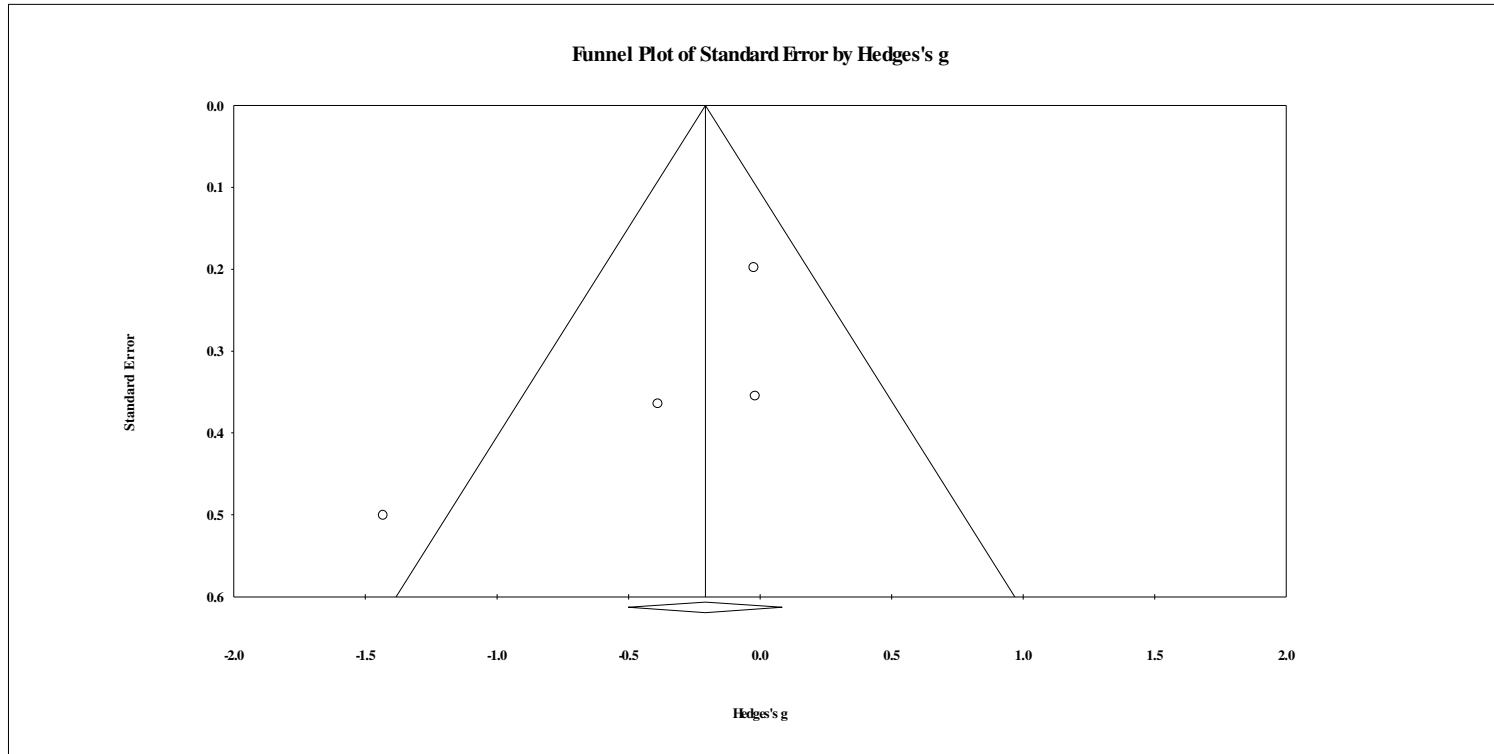
8. Hyperactivity/impulsivity (children, removing Gershy 2017)



9. Neuropsychological measures of inhibition (children)

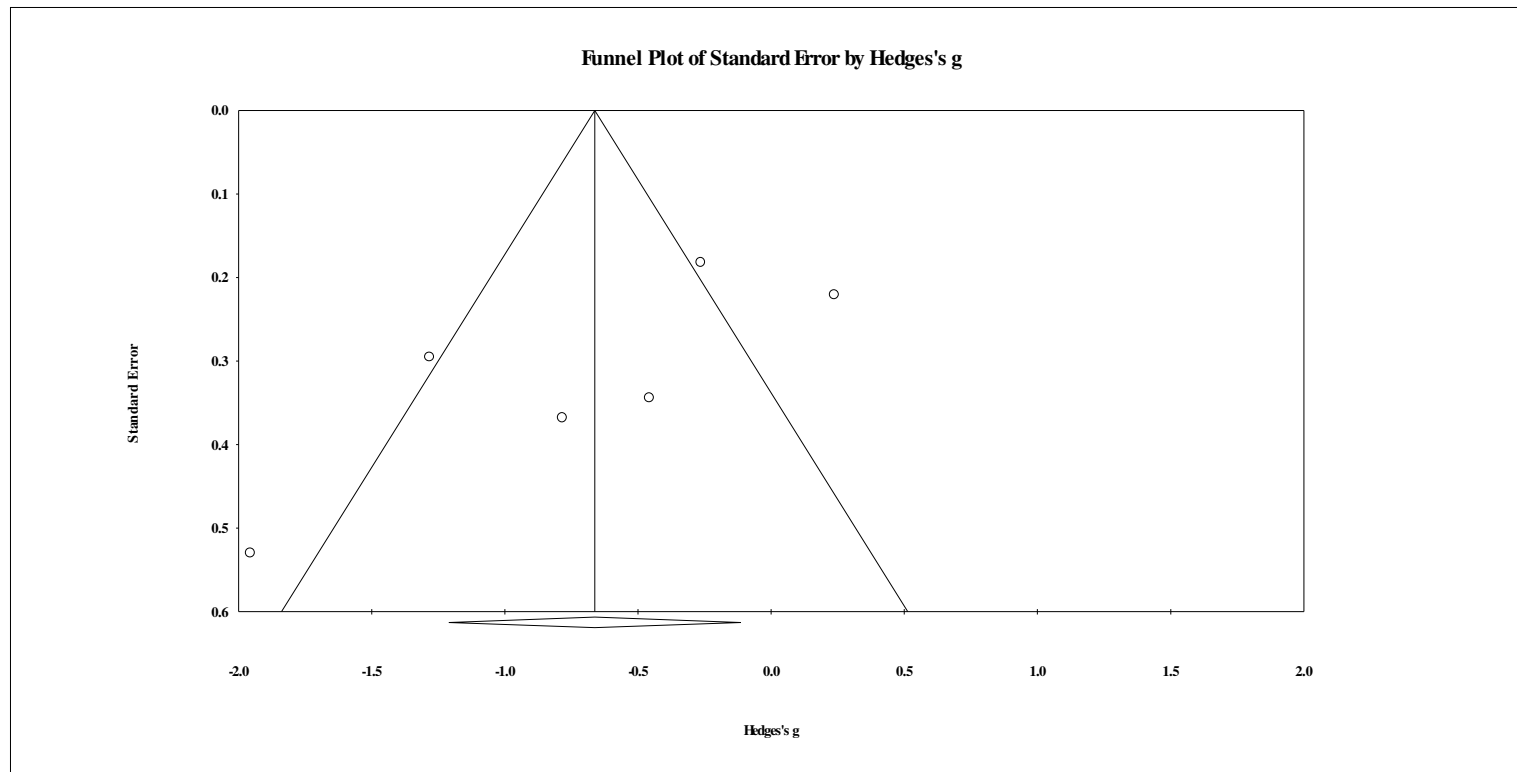


10. Neuropsychological measures of inattention (children)

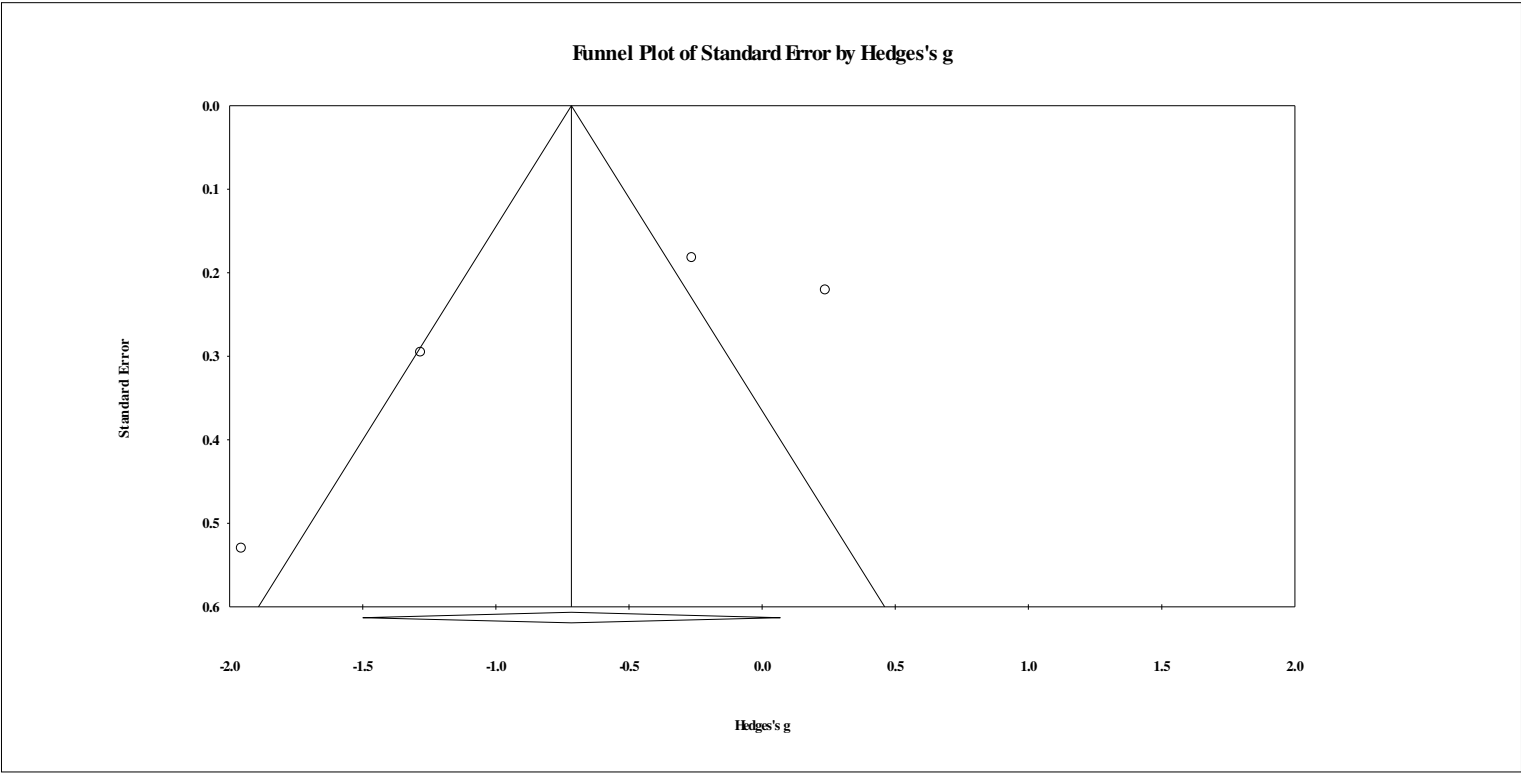


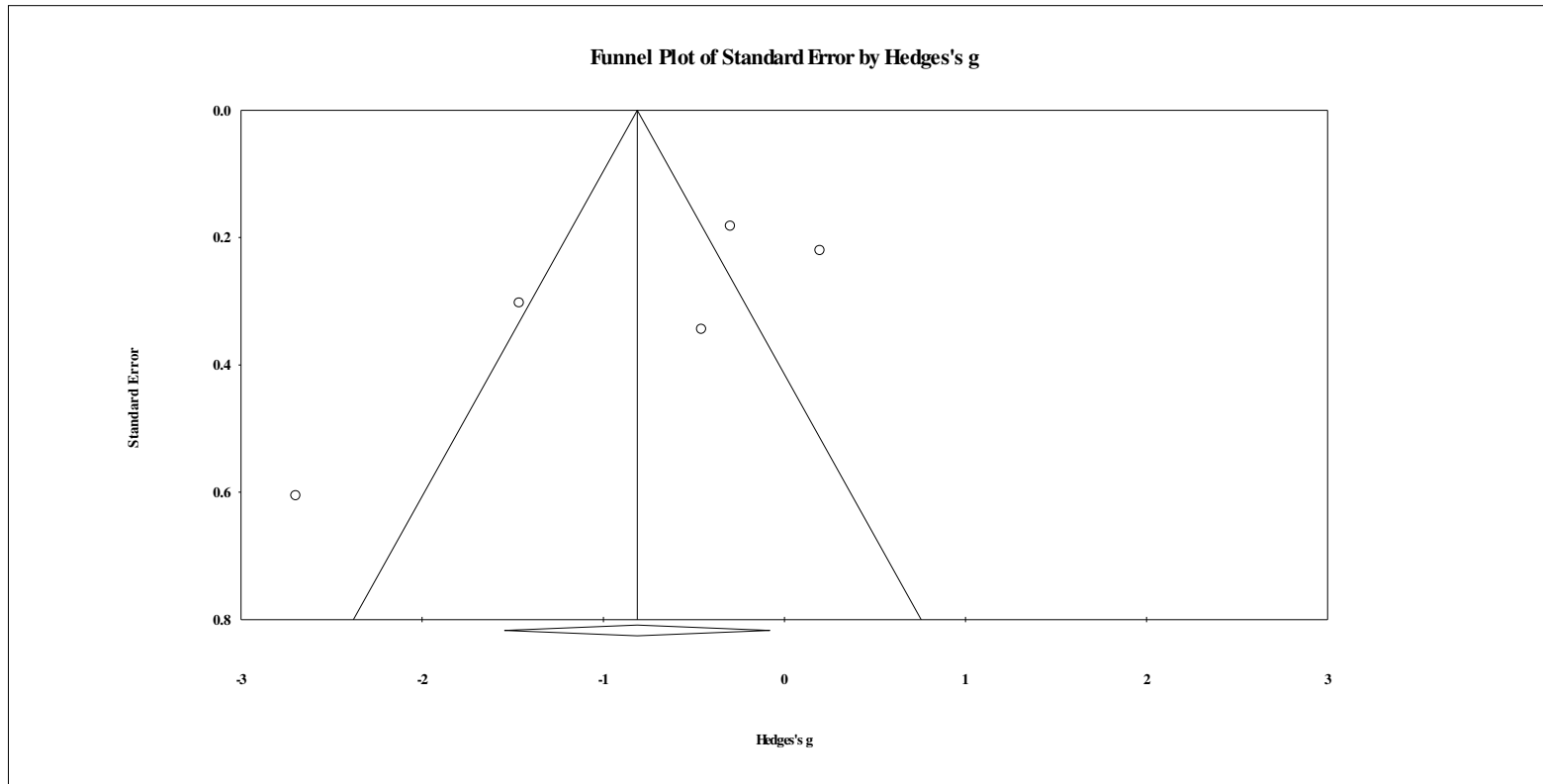
11. ADHD symptoms COMBINED OR inattention OR hyperactivity/ impulsivity (children, studies with with waiting list only)

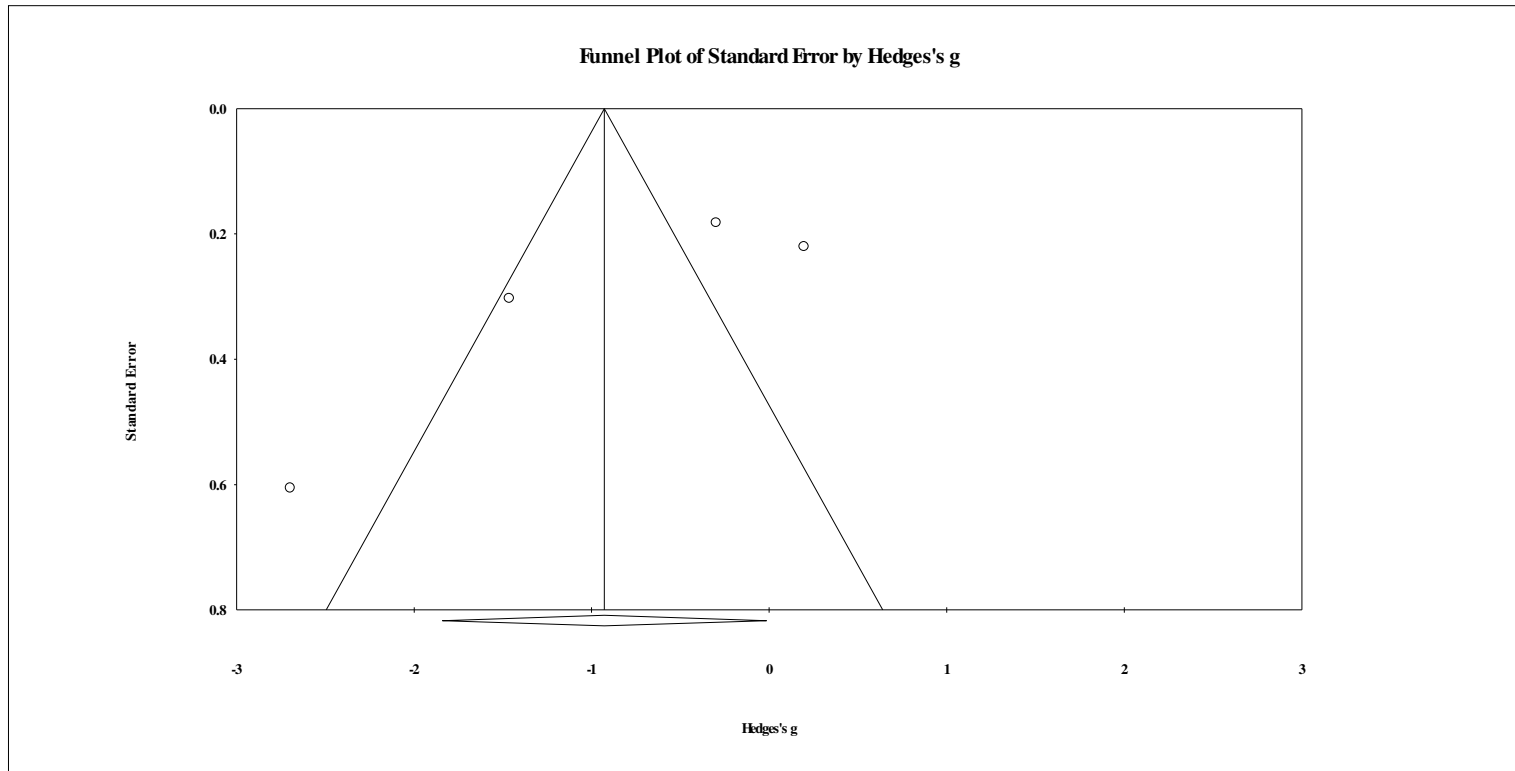
N/A

12. ADHD symptoms COMBINED OR inattention OR hyperactivity/ impulsivity (adults)

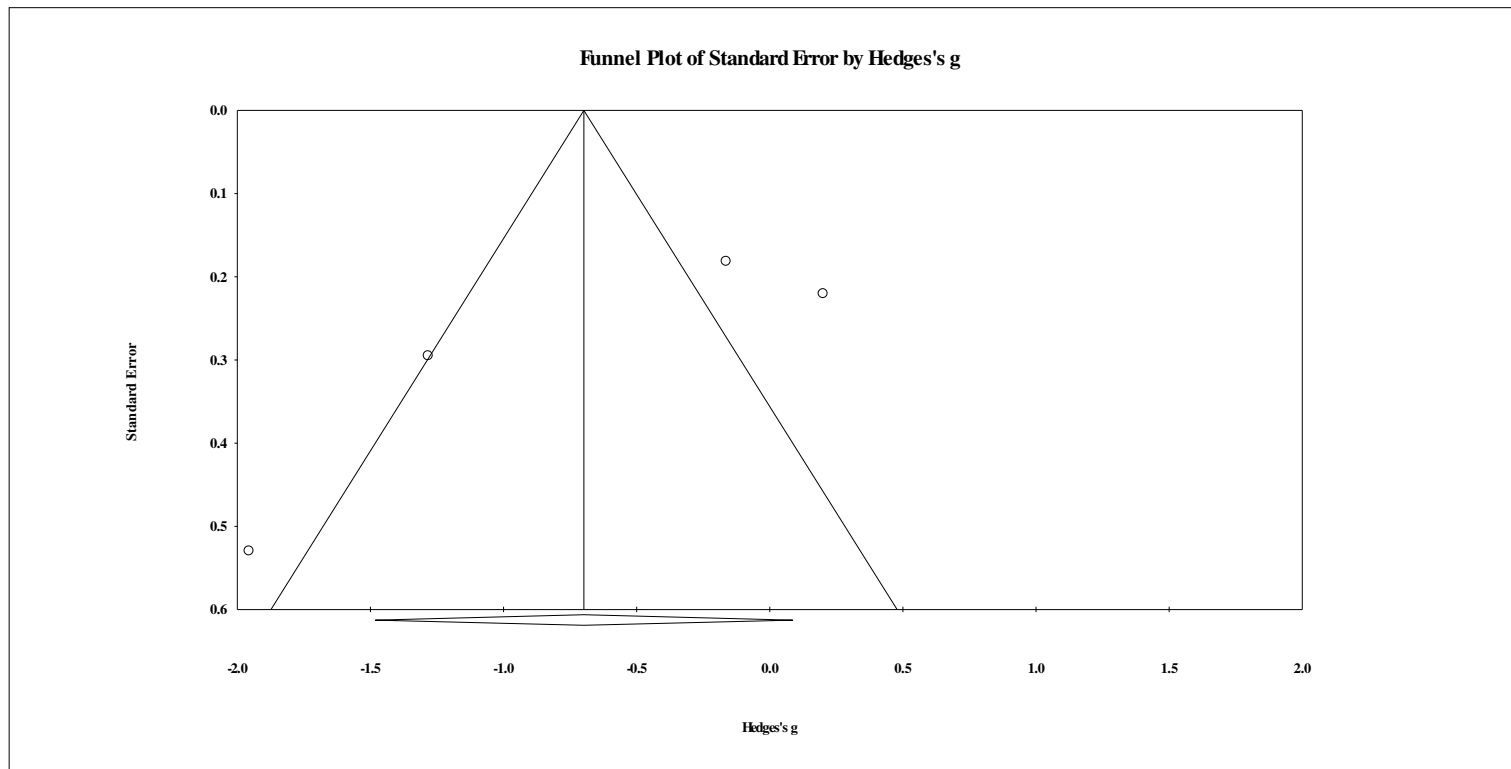
13. AHD symptoms COMBINED OR inattention OR hyperactivity/ impulsivity (adults, removing Fleming 2015 and Petterson 2017)



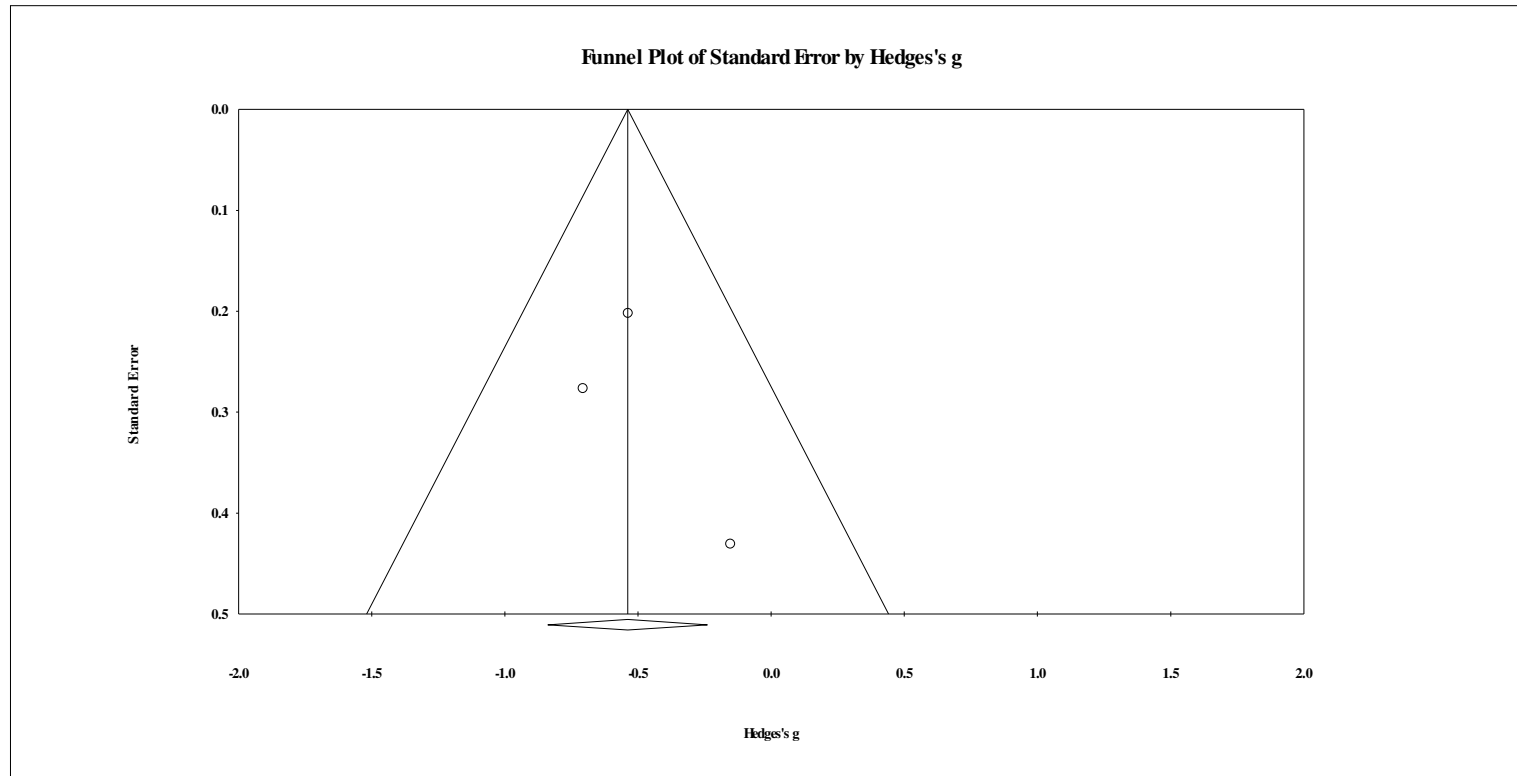
14. Inattention (adults)

15. Inattention (adults, removing Fleming 2015)

16. Hyperactivity/impulsivity (adults)



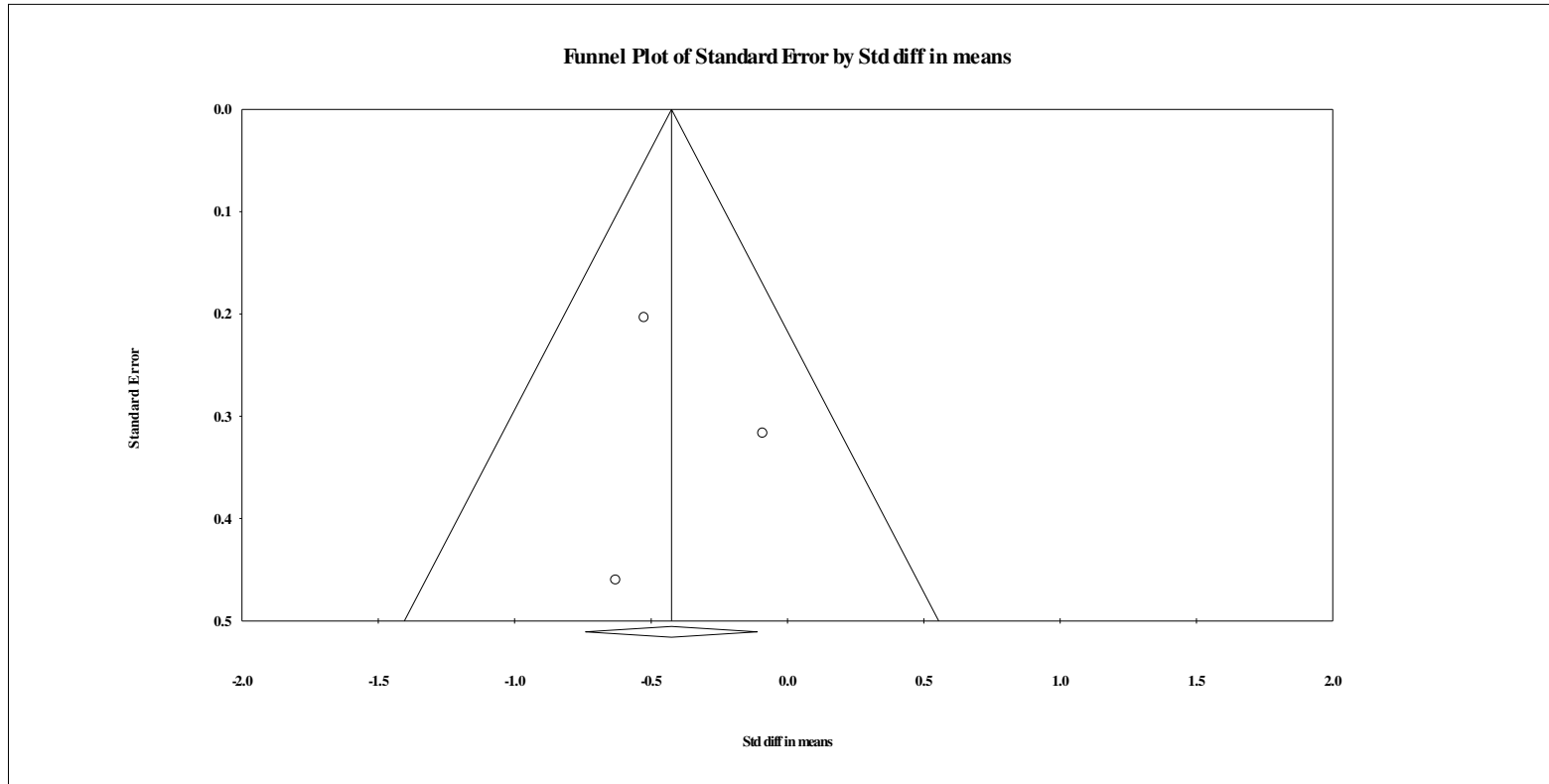
17. Neuropsychological measures of inhibition (adults)



18. Neuropsychological measures of inattention (adults)

Not applicable

19. Neuropsychological measures of working memory (adults)



20. ADHD symptoms COMBINED OR inattention OR hyperactivity/ impulsivity (adults, studies with waiting list only)

