

## Prevalence of Childhood Mental Disorders in High-Income Countries:

### A Systematic Review and Meta-Analysis to Inform Policymaking

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## Appendix A: MOOSE and PRISMA Checklists

MOOSE CHECKLIST		PRISMA CHECKLIST	
✓	Criteria and description	✓	Criteria and description
		✓	Title
		✓	Abstract
	<b>Reporting of background should include:</b>		<b>Introduction</b>
✓	Problem definition	✓	Rationale
N/A	Hypothesis statement	✓	Objectives
✓	Description of study outcomes		
✓	Type of exposure or intervention used		
✓	Type of study designs used		
✓	Study population		
	<b>Reporting of search strategy should include:</b>		<b>Methods</b>
		✓	Protocol and registration
		✓	Eligibility criteria
✓	Qualifications of searchers (e.g., librarians and investigators)		
✓	Search strategy, including time period included in the synthesis and keywords	✓	Search
✓	Databases and registries searched	✓	Information sources
✓	Search software used, name and version, including special features (e.g., explosion)		
✓	Use of hand searching (e.g., reference lists of obtained articles)		
✓	List of citations located and those excluded, including justifications		
✓	Description of any contact with authors		
✓	Method of addressing articles published in languages other than English		
✓	Method of handling abstracts and unpublished studies		
	<b>Reporting of methods should include:</b>		
✓	Description of relevance or appropriateness of studies assembled for assessing the hypothesis to be tested	✓	Study selection
✓	Rationale for the selection and coding of data (e.g., sound clinical principles or convenience)		
✓	Documentation of how data were classified and coded (e.g., multiple raters, blinding and interrater reliability)	✓	Data collection process
		✓	Data items
		✓	Summary measures
		✓	Risk of bias across studies
N/A	Assessment of confounding		
✓	Assessment of study quality, including blinding of quality assessors; stratification or regression on possible predictors of study results	✓	Risk of bias in individual studies
✓	Assessment of heterogeneity	✓	Synthesis of results
✓	Description of statistical methods in sufficient detail to be replicated		
		✓	Additional analyses
✓	Provision of appropriate tables and graphics		

	<b>Reporting of results should include:</b>		<b>Results</b>
		✓	Study selection
✓	Graph summarizing individual study estimates and overall estimate	✓	Results of individual studies
✓	Table giving descriptive information for each study included	✓	Study characteristics
		✓	Synthesis of results
		✓	Risk of bias within studies
N/A	Results of sensitivity testing	✓	Additional analysis
✓	Indication of statistical uncertainty of findings		
	<b>Reporting of discussion should include:</b>		<b>Discussion</b>
✓	Quantitative assessment of bias	✓	Risk of bias across studies
✓	Justification for exclusion		
✓	Assessment of quality of included studies		
	<b>Reporting of conclusions should include:</b>		
✓	Strengths and weaknesses	✓	Summary of evidence
✓	Potential biases in the review process (e.g., publication bias)	✓	Limitations
✓	Consideration of alternative explanations for observed results	✓	Conclusions
✓	Generalization of the conclusions Appropriate for the data presented and within the domain of the literature review.		
✓	Guidelines for future research		
✓	Disclosure of funding source	✓	Funding

N/A Not applicable

## Appendix B: Search Strategy

### MEDLINE

Step	Terms	Hits
1	*Mental Disorders/ep	14,099
2	(exp Child/ or exp Adolescent/) not Adult/	1,441,419
3	exp Epidemiology/ or exp Prevalence/ or exp Incidence/ or exp Health Surveys/	970,538
4	(epidemiolog\$ or survey\$ or population or community or represent\$ or stratifi\$ or probability).mp.	4,720,463
5	1 and 2 and 3 and 4	1,001
6	limit 5 to (yr="1990–current" and journal article and humans)	1,266

### PsycINFO

Step	Terms	Hits
1	SU *Mental Disorders	146,392
2	AG (Childhood OR Adolescence OR Young Adulthood) NOT AG (Thirties or Middle Age or Aged)	754,918
3	SU (Epidemiology) OR KW (epidemiolog* OR prevalence OR incidence OR health survey)	68,227
4	AB (epidemiolog* or survey* or population or community or represent* or stratifi* or probability)	1,039,360
5	1 and 2 and 3 and 4	1,136
6	limit 5 to (Publication Year: 1990–2021; Peer Reviewed; Population Group: Human; Document Type: Journal Article; Exclude Dissertations)	891

### EMBASE

Step	Terms	Hits
1	'Mental Disorders'/exp/mj (subheading: epidemiology)	81,540
2	AG (Childhood OR Adolescen*) NOT AG (Thirties or 'Middle Aged' or Aged) (limit to preschool child, school child or adolescent)	1,513,745
3	exp Epidemiology OR KW (epidemiolog* OR prevalence OR incidence OR health survey)	3,237,705
4	AB (epidemiolog* or survey* or population or community or represent* or stratifi* or probability)	4,216,831
5	1 and 2 and 3 and 4	1,846
6	limit 5 to (Publication Year: 1990–2021; Publication Type: Article; Index Term: Human)	1,602

Note: First and second authors (J.L.B. and D.Y.) conducted all searches.

### Appendix C: Study Inclusion Criteria

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- 1 Focused on children  $\leq 18$  years or reported separately on children if adults were included.
  - 2 Published in a peer-reviewed journal between January 1990 and February 2021.
  - 3 Population was drawn from a high-income country (by World Bank standards).
  - 4 Sample was representative of a national or regional population.\*
  - 5 Used probabilistic sampling to select respondents from a reliable frame.†
  - 6 Clear descriptions of participant characteristics, study settings and methods provided.
  - 7 Mental disorder diagnoses including impairment were based on DSM-IV and later editions or ICD-10 and later editions.
  - 8 Diagnostic measures were reliable and valid.
  - 9 Prevalence reported, or sufficient information was provided to estimate prevalence.
  - 10 Prevalence for three or more individual disorders, and overall prevalence of any disorder reported.
- 

\* Regional populations were those covering/representing a province, state or other large geographic area.

† Sampling frame comprised all possible units (e.g., individuals, schools or households) within a target population.

## Appendix D: Included Studies

- s1. Kessler RC, Avenevoli S, Costello J, *et al.* Severity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication Adolescent Supplement. *Arch Gen Psychiatry* 2012;69:381–389. doi:10.1001/archgenpsychiatry.2011.1603
- s2. Canino G, Shrout PE, Rubio-Stipec M, *et al.* The DSM-IV rates of child and adolescent disorders in Puerto Rico: Prevalence, correlates, service use, and the effects of impairment. *Arch Gen Psychiatry* 2004;61:85–93. doi:10.1001/archpsyc.61.1.85
- s3. Chen YL, Chen WJ, Lin KC, *et al.* Prevalence of DSM-5 mental disorders in a nationally representative sample of children in Taiwan: Methodology and main findings. *Epidemiol Psychiatr Sci* 2020;29:1–9. doi:10.1017/S2045796018000793
- s4. Costello EJ, Mustillo S, Erkanli A, *et al.* Prevalence and development of psychiatric disorders in childhood and adolescence. *Arch Gen Psychiatry* 2003;60:837–44. doi:10.1001/archpsyc.60.8.837
- s5. Elberling H, Linneberg A, Rask CU, *et al.* Psychiatric disorders in Danish children aged 5–7 years: A general population study of prevalence and risk factors from the Copenhagen Child Cohort (CCC 2000). *Nord J Psychiatry* 2016;70:146–55. doi:10.3109/08039488.2015.1070199
- s6. Farbstein I, Mansbach-Kleinfeld I, Levinson D, *et al.* Prevalence and correlates of mental disorders in Israeli adolescents: Results from a national mental health survey. *J Child Psychol Psychiatry* 2010;51:630–9. doi:10.1111/j.1469-7610.2009.02188.x
- s7. Ford T, Goodman R, Meltzer H. The British Child and Adolescent Mental Health Survey 1999: The prevalence of DSM-IV disorders. *J Am Acad Child Adolesc Psychiatry* 2003;42:1203–11. doi:10.1097/00004583-200310000-00011
- s8. Georgiades K, Duncan L, Wang L, *et al.* Six-month prevalence of mental disorders and service contacts among children and youth in Ontario: Evidence from the 2014 Ontario Child Health Study. *Can J Psychiatry* 2019;64:246–55. doi:10.1177/0706743719830024
- s9. Heiervang E, Stormark KM, Lundervold AJ, *et al.* Psychiatric disorders in Norwegian 8- to 10-year-olds: An epidemiological survey of prevalence, risk factors, and service use. *J Am Acad Child Adolesc Psychiatry* 2007;46:438–47. doi:10.1097/chi.0b013e31803062bf
- s10. Kessler RC, Avenevoli S, Costello EJ, *et al.* Prevalence, persistence, and sociodemographic correlates of DSM-IV disorders in the National Comorbidity Survey Replication Adolescent Supplement. *Arch Gen Psychiatry* 2012;69:372–80. doi:10.1001/archgenpsychiatry.2011.160
- s11. Lawrence D, Hafekost J, Johnson SE, *et al.* Key findings from the second Australian Child and Adolescent Survey of Mental Health and Wellbeing. *Aust N Z J Psychiatry* 2016;50:876–86. doi:10.1177/0004867415617836
- s12. Lesinskiene S, Girdzijauskiene S, Gintiliene G, *et al.* Epidemiological study of child and adolescent psychiatric disorders in Lithuania. *BMC Public Health* 2018;18:1–8. doi:10.1186/s12889-018-5436-3
- s13. Merikangas KR, He JP, Brody D, *et al.* Prevalence and treatment of mental disorders among US children in the 2001–2004 NHANES. *Pediatrics* 2010;125:75–81. doi:10.1542/peds.2008-2598
- s14. Park S, Kim BN, Cho SC, *et al.* Prevalence, correlates, and comorbidities of DSM-IV psychiatric disorders in children in Seoul, Korea. *Asia Pac J Public Health* 2015;27:1942–51. doi:10.1177/1010539513475656
- s15. Vicente B, Saldivia S, de la Barra F, *et al.* Prevalence of child and adolescent mental disorders in Chile: A community epidemiological study. *J Child Psychol Psychiatry* 2012;53:1026–35. doi:10.1111/j.1469-7610.2012.02566.x

## Appendix E: Risk of Bias Quality Assessment Tool

### Quality Assessment Checklist for Prevalence Studies (adapted from Hoy *et al.*, 2012)<sup>1</sup>

Name of author(s) and date:

Study/Survey Name:

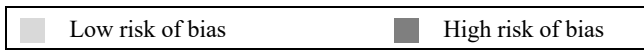
Risk of bias item	Risk of bias levels	Score
<b>External validity (Selection bias)</b>		
1. Was the study's target population a close representation of the regional or national population in relation to relevant variables?	<b>Yes (LOW RISK):</b> The study's target population was a close representation of the regional or national population.	0
	<b>No (HIGH RISK):</b> The study's target population was clearly NOT a close representation of the regional or national population.	1
2. Was the sampling frame a true or close representation of the target population?	<b>Yes (LOW RISK):</b> The sampling frame was a true or close representation of the target population.	0
	<b>No (HIGH RISK):</b> The sampling frame was NOT a true or close representation of the target population.	1
3. Was some form of random selection used to select the sample, OR was a census undertaken?	<b>Yes (LOW RISK):</b> A census was undertaken, OR, some form of random selection was used to select the sample (e.g. simple random sampling, stratified random sampling, cluster sampling, systematic sampling).	0
	<b>No (HIGH RISK):</b> A census was NOT undertaken, AND some form of random selection was NOT used to select the sample.	1
<b>External validity (Nonresponse bias)</b>		
4. Was the likelihood of nonresponse bias minimal?	<b>Yes (LOW RISK):</b> The response rate for the study was $\geq 75\%$ , OR, an analysis was performed that showed no significant difference in relevant demographic characteristics between responders and non-responders	0
	<b>No (HIGH RISK):</b> The response rate was $< 75\%$ , and if any analysis comparing responders and non-responders was done, it showed a significant difference in relevant demographic characteristics between responders and non-responders.	1
<b>Internal validity (Measurement bias)</b>		
5. Was the informant(s) appropriate for the data collected?	<b>Yes (LOW RISK):</b> All data were collected from appropriate informant(s).	0
	<b>No (HIGH RISK):</b> In majority of instances, data were collected from a proxy.	1
6. Was an acceptable case definition used in the study?	<b>Yes (LOW RISK):</b> An acceptable case definition was used.	0
	<b>No (HIGH RISK):</b> An acceptable case definition was NOT used.	1
7. Was the study instrument that measured the parameter of interest shown to have validity and reliability?	<b>Yes (LOW RISK):</b> The study instrument had been shown to have reliability and validity (if this was necessary), e.g. test-re-test, piloting, validation in a previous study, etc.	0
	<b>No (HIGH RISK):</b> The study instrument had NOT been shown to have reliability or validity (if this was necessary).	1
8. Was the same mode of data collection used for all subjects?	<b>Yes (LOW RISK):</b> The same mode of data collection was used for all subjects.	0
	<b>No (HIGH RISK):</b> The same mode of data collection was NOT used for all subjects.	1
9. Was the length of the shortest prevalence period for the parameter of interest appropriate?	<b>Yes (LOW RISK):</b> The shortest prevalence period for the parameter of interest was appropriate (e.g. point prevalence, one-week prevalence, one-year prevalence).	0
	<b>No (HIGH RISK):</b> The shortest prevalence period for the parameter of interest was not appropriate (e.g. lifetime prevalence).	1
<b>Internal validity (Bias related to analysis)</b>		
10. Were the numerator(s) and denominator(s) for the parameter of interest appropriate?	<b>Yes (LOW RISK):</b> The paper presented appropriate numerator(s) AND denominator(s) for the parameter of interest (e.g. the prevalence of low back pain).	0
	<b>No (HIGH RISK):</b> The paper did present numerator(s) AND denominator(s) for the parameter of interest but one or more of these were inappropriate.	1
<b>Summary on the overall risk of study</b>	<b>Low risk:</b> Further research is very unlikely to change our confidence in the estimate	0-3
	<b>Moderate risk:</b> Further research is likely to have an important impact on our confidence in the estimate and may change the estimate.	4-6
	<b>High risk:</b> Further research is very likely to have an important impact on our confidence in the estimate and is likely to change the estimate.	7-10

1. Hoy D, Brooks P, Woolf A, Blyth F, March L, Bain C, *et al.* Assessing risk of bias in prevalence studies: modification of an existing tool and evidence of interrater agreement. *J Clin Epidemiol.* 2012;65:934-939.

**Risk of Bias: Summary of Results**

Representativeness (Selection bias)	100%	
Sampling frame (Selection bias)	100%	
Random selection (Performance bias)	100%	
Nonresponse bias	100%	
Informant (Measurement bias)	93%	7%
Case definition (Measurement bias)	100%	
Validity and reliability of measures (Measurement bias)	100%	
Mode of data collection (Measurement bias)	100%	
Prevalence period (Measurement bias)	100%	
Bias related to analysis	100%	

0 100





## Appendix F: Excluded Studies

### Non-representative sample (n=39)

- Al-Modayfer, O., & Alatiq, Y. (2015). A pilot study on the prevalence of psychiatric disorders among Saudi children and adolescents: A sample from a selected community in Riyadh City. *Arab Journal of Psychiatry*, 26(2), 184-192.
- Angold, A., Erkanli, A., Farmer, E. M., Fairbank, J. A., Burns, B. J., Keeler, G., & Costello, E. J. (2002). Psychiatric disorder, impairment, and service use in rural African American and white youth. *Archives of General Psychiatry*, 59(10), 893-901.
- Bufferd, S. J., Dougherty, L. R., Carlson, G. A., Rose, S., & Klein, D. N. (2012). Psychiatric disorders in preschoolers: Continuity from ages 3 to 6. *The American Journal of Psychiatry*, 169(11), 1157-1164.
- Canals, J., Domenech, E., Carbajo, G., & Blade, J. (1997). Prevalence of DSM-III-R and ICD-10 psychiatric disorders in a Spanish population of 18-year-olds. *Acta Psychiatrica Scandinavica*, 96(4), 287-294.
- Canals, J., Voltas, N., Hernández-Martínez, C., Cosi, S., & Arijia, V. (2019). Prevalence of DSM-5 anxiety disorders, comorbidity, and persistence of symptoms in Spanish early adolescents. *European Child & Adolescent Psychiatry*, 28, 131-143.
- Carter, A. S., Wagmiller, R. J., Gray, S. A., McCarthy, K. J., Horwitz, S. M., & Briggs-Gowan, M. J. (2010). Prevalence of DSM-IV disorder in a representative, healthy birth cohort at school entry: sociodemographic risks and social adaptation. *Journal of the American Academy of Child & Adolescent Psychiatry*, 49(7), 686-698.
- Coughlan, H., Tiedt, L., Clarke, M., Kelleher, I., Tabish, J., Molloy, C., . . . Cannon, M. (2014). Prevalence of DSM-IV mental disorders, deliberate self-harm and suicidal ideation in early adolescence: an Irish population-based study. *Journal of Adolescence*, 37(1), 1-9.
- Cuffe, S. P., McKeown, R. E., Addy, C. L., & Garrison, C. Z. (2005). Family and psychosocial risk factors in a longitudinal epidemiological study of adolescents. *Journal of the American Academy of Child & Adolescent Psychiatry*, 44(2), 121-129.
- Daeem, R., Mansbach-Kleinfeld, I., Farbstein, I., Goodman, R., Elias, R., Ifrah, A., . . . Apter, A. (2019). Correlates of mental disorders among minority Arab adolescents in Israel: Results from the Galilee Study. *Israel Journal of Health Policy Research*, 8(1).
- Danielson, M. L., Bitso, R. H., Holbrook, J. R., Charania, S. N., Claussen, A. H., McKeown, R. E., . . . Flory, K. (2020). Community-based prevalence of externalizing and internalizing disorders among school-aged children and adolescents in four geographically dispersed school districts in the United States. *Child Psychiatry & Human Development*. doi:10.1007/s10578-020-01027-z
- Dimigen, G., Del Priore, C., Butler, S., Evans, S., Ferguson, L., & Swan, M. (1999). Psychiatric disorder among children at time of entering local authority care: Questionnaire survey. *BMJ*, 319(7211), 675.
- Eapen, V., al-Gazali, L., Bin-Othman, S., & Abou-Saleh, M. (1998). Mental health problems among schoolchildren in United Arab Emirates: Prevalence and risk factors. *Journal of the American Academy of Child & Adolescent Psychiatry*, 37(8), 880-886.
- Eapen, V., Jakka, M. E., & Abou-Saleh, M. T. (2003). Children with psychiatric disorders: The A1 Ain Community Psychiatric Survey. *Canadian Journal of Psychiatry*, 48(6), 402-407.
- Essau, C. A., Conradt, J., & Petermann, F. (2000). Frequency, comorbidity, and psychosocial impairment of depressive disorders in adolescents. *Journal of Adolescent Research*, 15(4), 470-481.
- Esser, G., Schmidt, M. H., & Woerner, W. (1990). Epidemiology and course of psychiatric disorders in school-age children: Results of a longitudinal study. *Journal of Child Psychology & Psychiatry & Allied Disciplines*, 31(2), 243-263.
- Faravelli, C., Lo Sauro, C., Castellini, G., Ricca, V., & Pallanti, S. (2009). Prevalence and correlates of mental disorders in a school-survey sample. *Clinical Practice and Epidemiology in Mental Health*, 5.
- Frigerio, A., Rucci, P., Goodman, R., Ammaniti, M., Carlet, O., Cavolina, P., . . . Molteni, M. (2009). Prevalence and correlates of mental disorders among adolescents in Italy: The PrISMA study. *European Child and Adolescent Psychiatry*, 18(4), 217-226.
- Gårdvik, K. S., Rygg, M., Torgersen, T., Lydersen, S., & Indredavik, M. S. (2020). Psychiatric morbidity, somatic comorbidity and substance use in an adolescent psychiatric population at 3-year follow-up. *European Child & Adolescent Psychiatry*. doi.org/10.1007/s00787-020-01602-8
- Gau, S. S. F., Chong, M. Y., Chen, T. H. H., & Cheng, A. T. A. (2005). A 3-year panel study of mental disorders among adolescents in Taiwan. *American Journal of Psychiatry*, 162(7), 1344-1350.

20. Goodman, R., Ford, T., Richards, H., Gatward, R., & Meltzer, H. (2000). The development and well-being assessment: Description and initial validation of an integrated assessment of child and adolescent psychopathology. *Journal of Child Psychology and Psychiatry*, 41(5), 645–655.
21. Griesler, P. C., Hu, M. C., Schaffran, C., & Kandel, D. B. (2008). Comorbidity of psychiatric disorders and nicotine dependence among adolescents: findings from a prospective, longitudinal study. *Journal of the American Academy of Child & Adolescent Psychiatry*, 47(11), 1340-1350.
22. Gudmundsson, O. O., Magnusson, P., Saemundsen, E., Lauth, B., Baldursson, G., Skarphedinsson, G., & Fombonne, E. (2013). Psychiatric disorders in an urban sample of preschool children. *Child and Adolescent Mental Health*, 18(4), 210-217.
23. Harley, M. E., Connor, D., Clarke, M. C., Kelleher, I., Coughlan, H., Lynch, F., . . . Cannon, M. (2015). Prevalence of mental disorder among young adults in Ireland: A population based study. *Irish Journal of Psychological Medicine*, 32(Spec Iss1), 79-91.
24. Lavigne, J. V., Lebailly, S. A., Hopkins, J., Gouze, K. R., & Binns, H. J. (2009). The prevalence of ADHD, ODD, depression, and anxiety in a community sample of 4-year-olds. *Journal of Clinical Child and Adolescent Psychology*, 38(3), 315-328.
25. Leung, P. W., Hung, S. F., Ho, T. P., Lee, C. C., Liu, W. S., Tang, C. P., & Kwong, S. L. (2008). Prevalence of DSM-IV disorders in Chinese adolescents and the effects of an impairment criterion: a pilot community study in Hong Kong. *European Child & Adolescent Psychiatry*, 17(7), 452-461.
26. Loperfido, E., & Rigon, G. (1994). Valutazione epicritica di una ricerca di prevalenza dei disturbi psichiatrici nella popolazione dell'obbligo scolastico = Final appraisal about a prevalence research regarding the psychiatric disorders in a compulsory school population (aged 6 to 12). *Giornale di Neuropsichiatria dell'Età Evolutiva*, 14(1), 17-25.
27. Melfsen, S., Walitza, S., & Warnke, A. (2006). The extent of social anxiety in combination with mental disorders. *European Child & Adolescent Psychiatry*, 15(2), 111-117.
28. Meyer, J. M., Silberg, J. L., Simonoff, E., Kendler, K. S., & Hewitt, J. K. (1996). The Virginia Twin-Family Study of Adolescent Behavioral Development: Assessing sample biases in demographic correlates of psychopathology. *Psychological Medicine*, 26(6), 1119-1133.
29. Morita, H., Suzuki, M., Suzuki, S., & Kamoshita, S. (1993). Psychiatric disorders in Japanese secondary school children. *Journal of Child Psychology & Psychiatry & Allied Disciplines*, 34(3), 317-332.
30. Nesvag, R., Bramness, J. G., Handal, M., Hartz, I., Hjellvik, V., & Skurtveit, S. (2018). The incidence, psychiatric co-morbidity and pharmacological treatment of severe mental disorders in children and adolescents. *European Psychiatry*, 49, 16-22.
31. Petersen, D. J., Bilenberg, N., Hoerder, K., & Gillberg, C. (2006). The population prevalence of child psychiatric disorders in Danish 8- to 9-year-old children. *European Child & Adolescent Psychiatry*, 15(2), 71-78.
32. Rijlaarsdam, J., Stevens, G. W., van der Ende, J., Hofman, A., Jaddoe, V. W., Verhulst, F. C., & Tiemeier, H. (2015). Prevalence of DSM-IV disorders in a population-based sample of 5- to 8-year-old children: the impact of impairment criteria. *European Child & Adolescent Psychiatry*, 24(11), 1339-1348.
33. Roberts, R. E., Roberts, C. R., & Xing, Y. (2007b). Rates of DSM-IV psychiatric disorders among adolescents in a large metropolitan area. *Journal of Psychiatric Research*, 41(11), 959-967.
34. Roberts, N., Stuart, H., & Lam, M. (2008). High school mental health survey: Assessment of a mental health screen. *Canadian Journal of Psychiatry*, 53(5), 314-322.
35. Seidler, Z. E., Rice, S. M., Dhillon, H. M., Cotton, S. M., Telford, N. R., McEachran, J., . . . Rickwood, D. J. (2020). Patterns of youth mental health service use and discontinuation: Population data from Australia's headspace model of care. *Psychiatric Services*, 77(11), 1104–1113.
36. Suzuki, M., Suzuki, S., & Morita, H. (1990). Epidemiological survey of psychiatric disorders of Japanese school children. Part 2. Prevalence of psychiatric disorders in school children. [*Nippon kōshū eisei zasshi*] *Japanese Journal of Public Health*, 37(3), 146-152.
37. Toledo, V., De La Barra, F., Lopez, C., George, M., & Rodriguez, J. (1997). Psychiatric diagnosis in a cohort of first grade basic course children from the Western area of Santiago de Chile. *Revista Chilena de Neuro-Psiquiatria*, 35(1), 17-24.
38. Wichstrøm, L., Berg-Nielsen, T. S., Angold, A., Egger, H. L., Solheim, E., & Sveen, T. H. (2012). Prevalence of psychiatric disorders in preschoolers. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 53(6), 695-705.

39. Yoo, H. I., Cho, S. C., Kim, B. N., Kim, S. Y., Shin, M. S., & Hong, K. E. (2005). Psychiatric morbidity of second and third grade primary school children in Korea. *Child Psychiatry & Human Development*, *36*(2), 215-225.

**No relevant diagnoses reported (n=37)**

1. Al Gelban, K. S. (2009). Prevalence of psychological symptoms in Saudi secondary school girls in Abha, Saudi Arabia. *Annals of Saudi Medicine*, *29*(4), 275-279.
2. Baranne, M. L., & Falissard, B. (2018). Global burden of mental disorders among children aged 5–14 years. *Child and Adolescent Psychiatry and Mental Health*, *12*.
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**Not high-income country (n=3)**

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**Reported lifetime diagnoses only (n=1)**

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## Appendix G: Meta-regression on the Effects of Potential Moderators on Overall Heterogeneity for Any Childhood Mental Disorder

**Table S1:** Meta-regression on effects of potential moderators on overall heterogeneity for any childhood mental disorder

Moderator	Overall p-value*	Variable†	Rate difference estimation	
			Mean difference‡ (95% CI)	p-value§
<b>Significant moderators</b>				
Overall study design	0.027	One-stage	Reference	
		Two-stage	-0.057 (-0.09, -0.008)	0.027
Study location (Continent)	0.009	North America	Reference	
		Asia	0.016 (-0.061, 0.13)	0.728
		Europe	-0.09 (-0.127, -0.025)	0.012
		Oceania	-0.032 (-0.114, 0.132)	0.631
		South America	0.055 (-0.073, 0.269)	0.494
Diagnostic standard	0.048	DSM-IV(TR)	Reference	
		ICD-10	-0.041 (-0.079, 0.024)	0.182
		DSM-5	0.123 (-0.002, 0.311)	0.056
Diagnostic measure	<0.001	DAWBA	Reference	
		CAPA	0.046 (-0.007, 0.124)	0.099
		CIDI	-0.012 (-0.043, 0.038)	0.586
		DISC-IV	0.07 (0.031, 0.118)	<0.001
		MINI-KID	0.109 (0.036, 0.213)	<0.001
		K-SADS-E	0.163 (0.073, 0.281)	<0.001
Informants	<0.001	Parent, child	Reference	
		Parent only	0.067 (0.022, 0.122)	0.002
		Child only	0.093 (0.039, 0.16)	<0.001
		Parent, child, teacher	-0.007 (-0.042, 0.04)	0.723
		Parent, teacher	-0.058 (-0.078, -0.03)	<0.001
Diagnostic algorithm for reporting/combining data from informants	<0.001	Clinical judgement	Reference	
		One source (child or parent only)¶	0.104 (0.05, 0.172)	<0.001
		OR rule	0.03 (-0.007, 0.08)	0.121
Timeframes for assessing symptoms and impairment	0.003	12 months	Reference	
		≤6 months	0.049 (-0.017, 0.138)	0.164
		1–12 months	-0.052 (-0.081, -0.011)	0.018
<b>Non-significant moderators</b>				
Sampling area	0.356	National	Reference	
		Regional	0.027 (-0.025, 0.103)	0.356
Data collection years	0.252	≤year 2010	Reference	
		>year 2010	0.032 (-0.019, 0.105)	0.252

Sampling frame	0.185	Households	Reference	
		National registry	-0.065 (-0.106, 0.007)	0.071
		Schools	-0.026 (-0.071, 0.04)	0.391
Child age	0.342	All ages (e.g., 4–18)	Reference	
		Children	-0.044 (-0.086, 0.019)	0.15
		Adolescents	-0.028 (-0.078, 0.048)	0.418
Child sex	0.56	All	Reference	
		Boy	0.005 (-0.047, 0.081)	0.876
		Girl	-0.026 (-0.067, 0.037)	0.369

\* An overall p-value of <0.05 for the moderator indicates a significant source of heterogeneity.

† The variable with the greatest number of studies was selected as a reference variable.

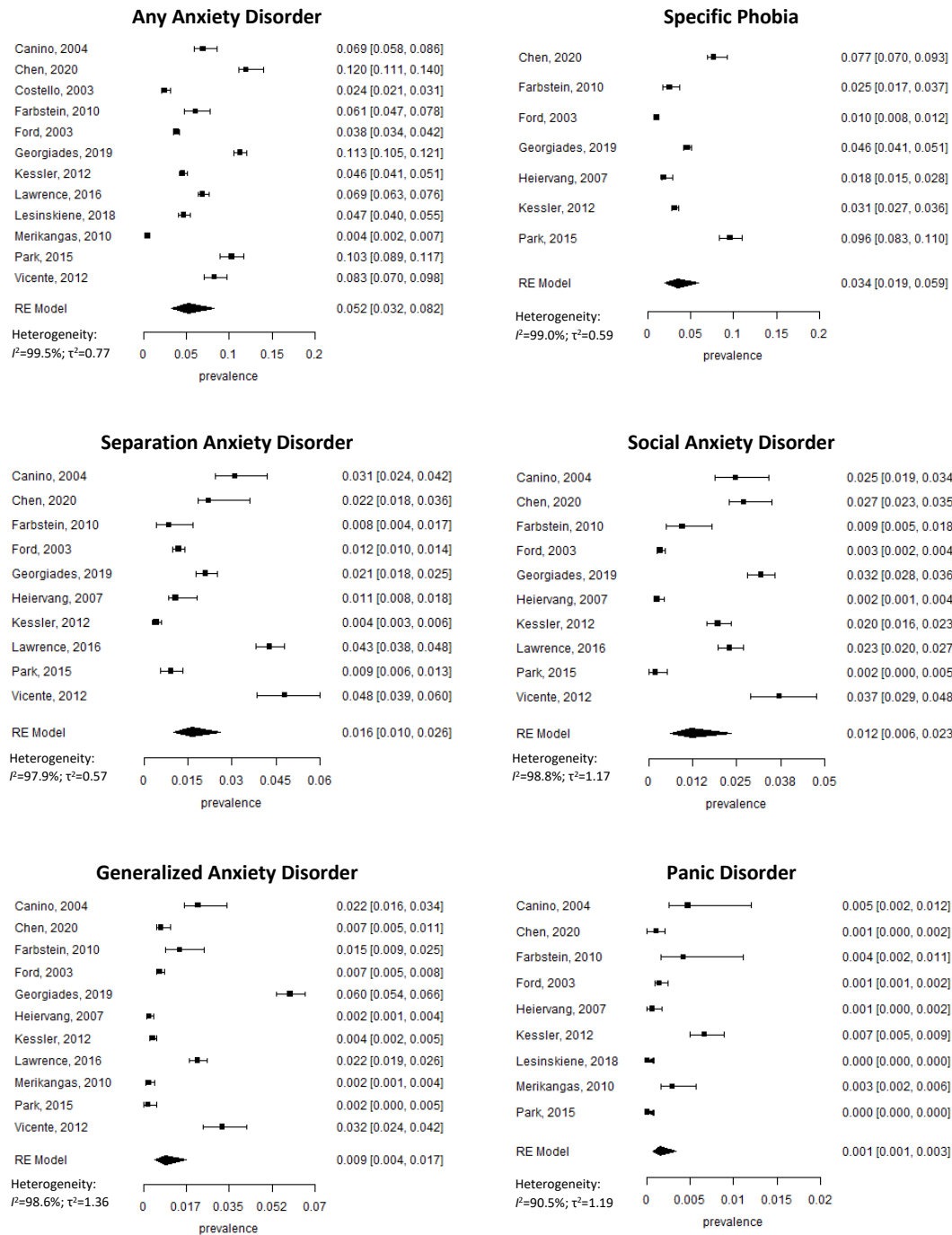
‡ A positive mean difference indicates a higher prevalence in comparison to the reference variable; a negative mean difference indicates a lower prevalence.

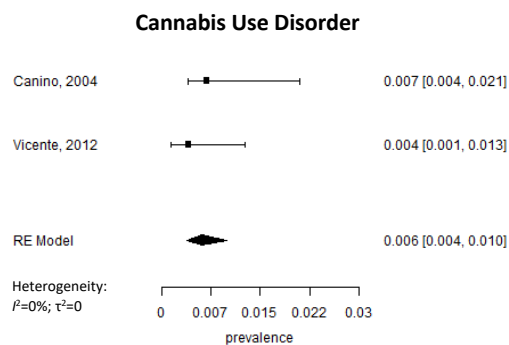
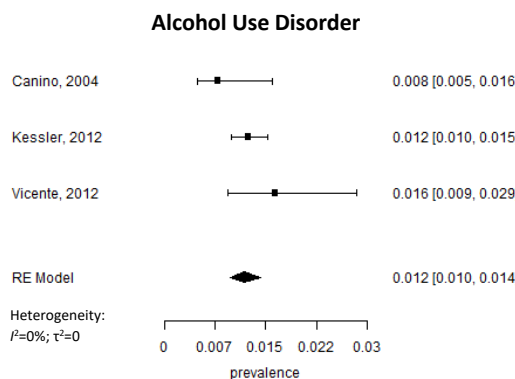
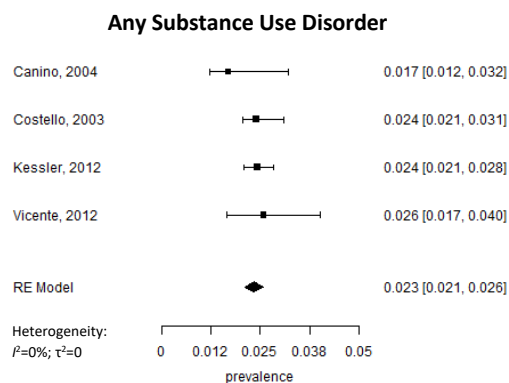
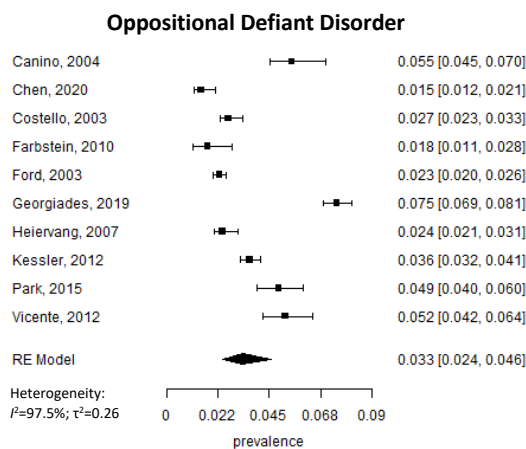
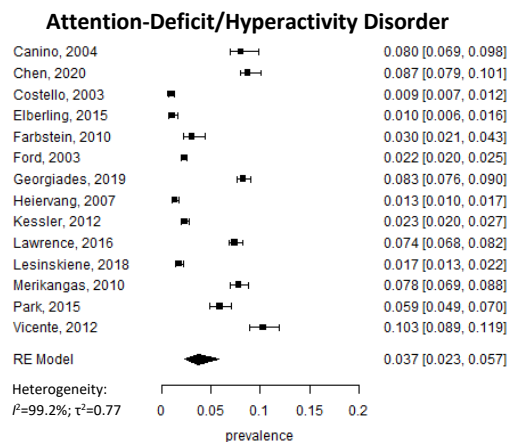
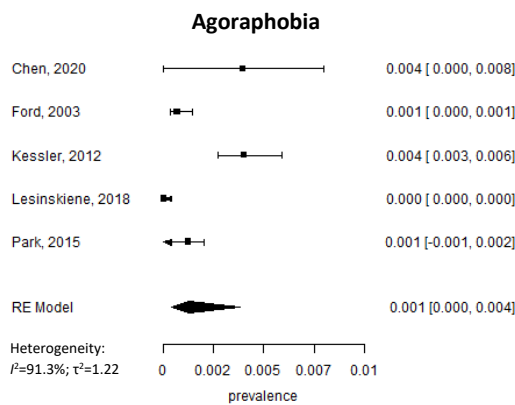
§ A p-value of <0.05 for a variable indicates a significant difference in prevalence estimates in comparison to the reference variable.

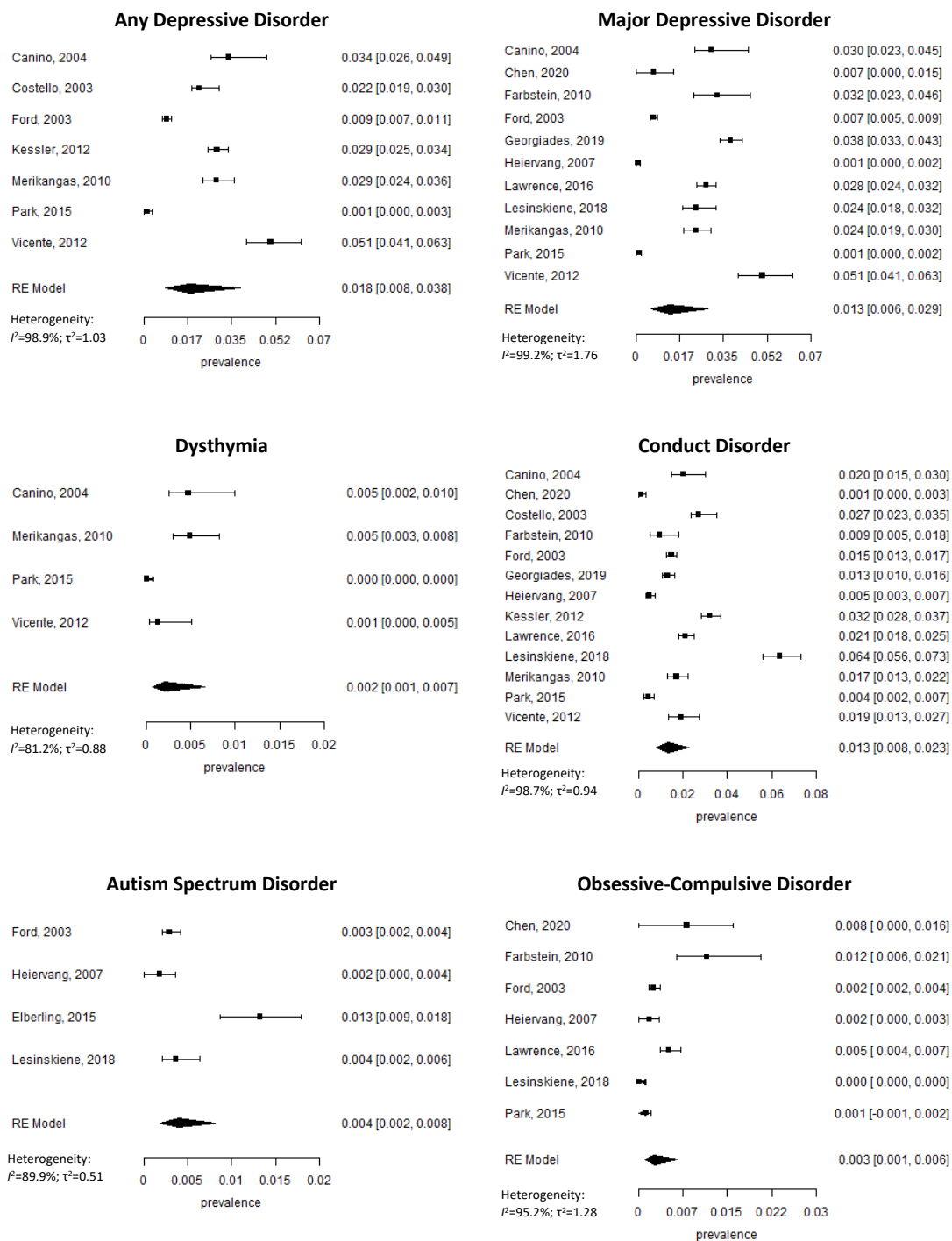
¶ Separating the variable according to “child only” and “parent only” still yielded significant effects (p<0.001 for each variable).

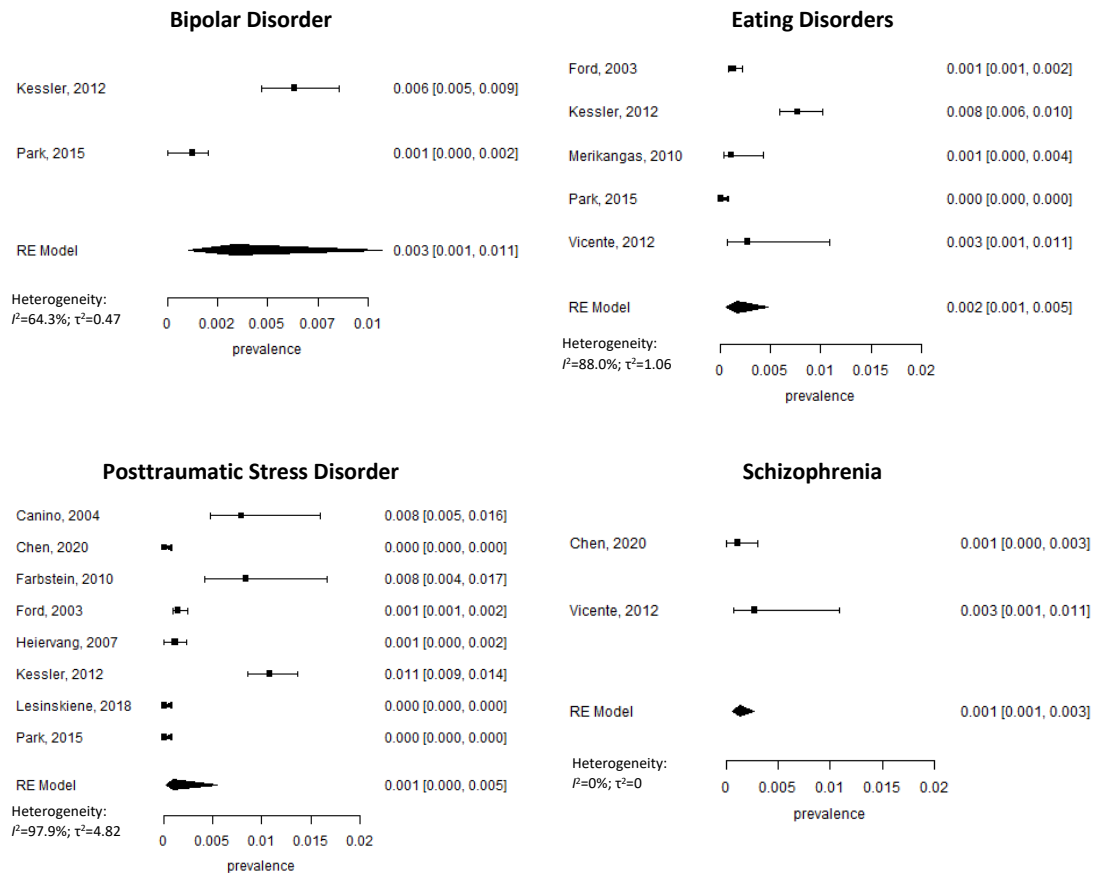
CAPA, Child and Adolescent Psychiatric Assessment; CIDI, Composite International Diagnostic Interview; Structured; DAWBA, Development and Well-Being Assessment; DISC-IV, Diagnostic Interview Schedule for Children; DSM, Diagnostic and Statistical Manual of Mental Disorders; ICD, International Statistical Classification of Diseases and Related Health Problems; K-SADS-E, Kiddie Schedule for Affective Disorders and Schizophrenia-Epidemiological; MINI-KID, Mini-International Neuropsychiatric Interview for Children and Adolescents

### Appendix H: Forest Plots for Prevalence of Individual Disorders and Disorder Groups









Note: Forest plots for individual disorders and categories of disorders included the prevalence estimates and the corresponding 95% confidence intervals.