

eTable 1. Applied keywords and the search results from each database

Database	Keywords	Filter	Date (yyyy/mm/dd)	Result
PubMed	(probiotics or psychobiotic or probio) and (depression or depressive symptoms or mood)	RCT	2024/05/02	346
Embase	(probiotics or psychobiotic or probio) and (depression or depressive symptoms or mood)	RCT	2024/05/02	237
Cochrane CENTRAL	(probiotics or psychobiotic or probio) and (depression or depressive symptoms or mood)	Trials	2024/05/02	538
ScienceDirect	probiotics and (depression or depressive symptoms or mood)	Research articles	2024/05/02	349
Clinicaltrials.gov	Depression and probiotics	Nil	2024/05/02	49

Abbreviations: NA, not applied; RCT, randomized controlled trial

eTable 2 Reasons for study exclusion

Reason	Number of excluded studies	References
Not targeted at children or adolescents	7	[1-7]
Not Randomized clinical trials	4	[8-11]
No outcome for symptoms of depression	3	[12-14]
No probiotic use	2	[15, 16]

References

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16. Kok, C.R., et al., *Stool microbiome, pH and short/branched chain fatty acids in infants receiving extensively hydrolyzed formula, amino acid formula, or human milk through two months of age*. BMC Microbiol, 2020. **20**(1): p. 337.

eTable 3. Grading of Recommendations Assessments, Development and Evaluation (GRADE) assessment of the strength of evidence for standard weighted meta-analysis

Outcome	Design	Risk of bias	Indirectness	Inconsistency	Imprecision	Publication bias	Grade Quality
Depression	RCT x 5	No Serious	No indirectness	Serious inconsistency	Serious imprecision	Undetected	⊕○○○ ^{3,4*}
Numbers of dropouts	RCT x 5	No Serious	No indirectness	No serious inconsistency	Serious imprecision	Undetected	⊕⊕○○ ^{4*}

*Risk of bias was estimated using Cochrane risk of bias, studies were classified as having low risk of bias if none of the domains above was rated as high risk of bias and three or less were rated as unclear risk; moderate if one was rated as high risk of bias or none was rated as high risk of bias but four or more were rated as unclear risk, and all other cases were assumed to pertain to high risk of bias.

Down-graded due to: ¹ risk of bias, ² indirectness, ³ Inconsistency, ⁴ Imprecision, ⁵ publication bias

^{4*} Down-graded two levels due to very low sample sizes

Abbreviation: ASD autism spectrum disorder

GRADE Working Group grades of evidence:

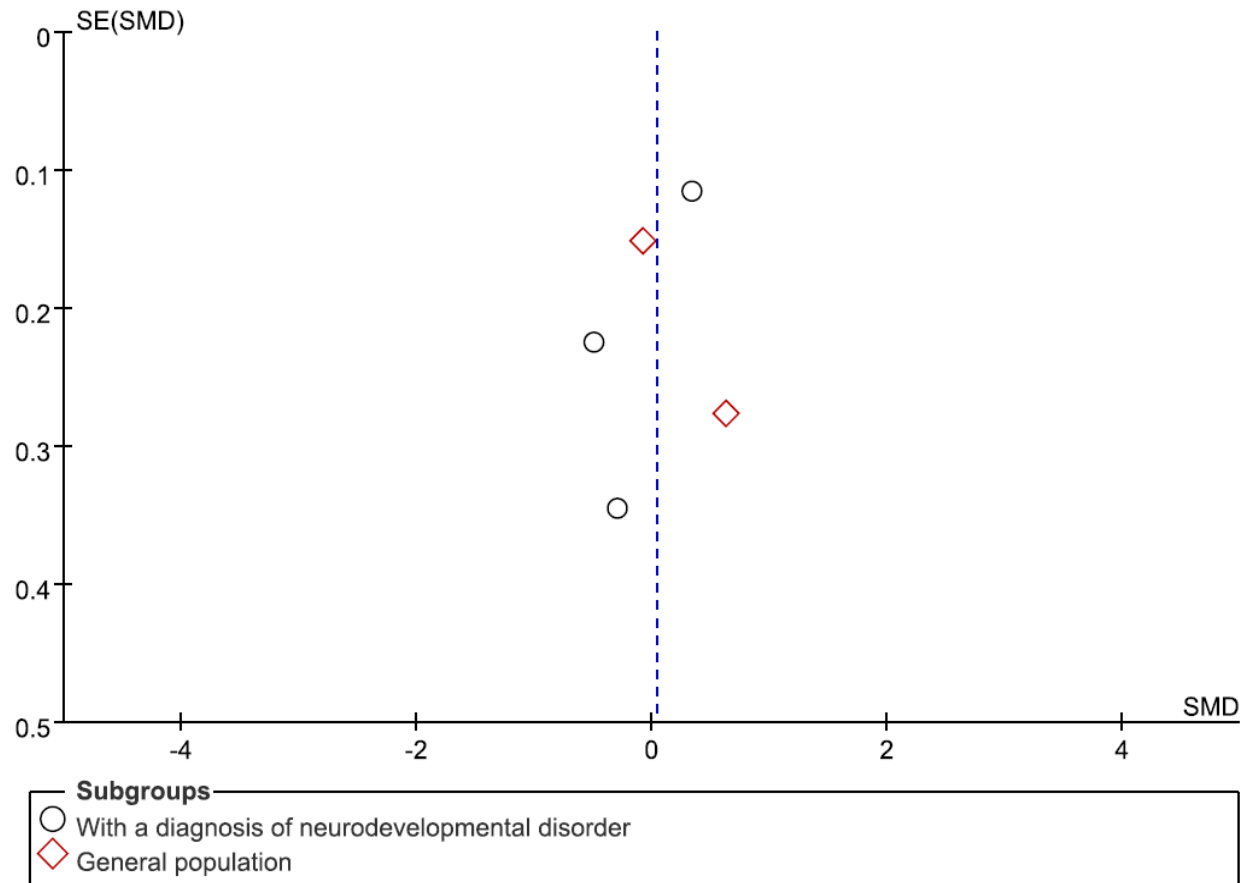
-High certainty: We are very confident that the true effect lies close to that of the estimate of the effect

-Moderate certainty: We are moderately confident in the effect estimate: The true effect is likely to be close to the estimate of the effect, but there is a possibility that it is substantially different.

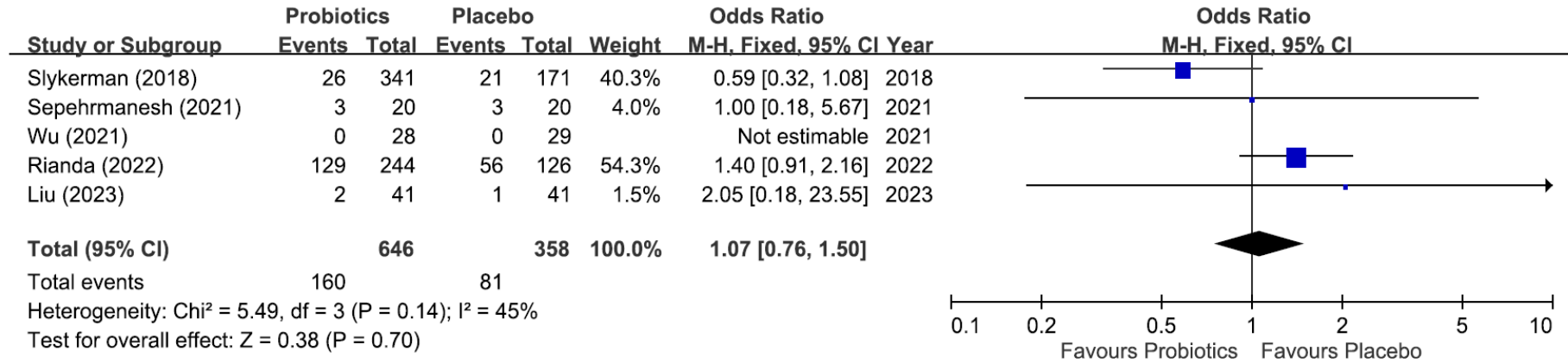
-Low certainty: Our confidence in the effect estimate is limited: The true effect may be substantially different from the estimate of the effect.

-Very low certainty: We have very little confidence in the effect estimate: The true effect is likely to be substantially different from the estimate of effect.

eFigure 1. Funnel plot – depression



eFigure 2. Odds ratio of dropout rate in Probiotic group compared with control



eFigure 3. Funnel plot – dropout rate

