Online Supplement

Prevalence of cardiovascular risk factors according to Life's Essential 8 in children and adolescents during the COVID-19 pandemic: A systematic review and meta-analysis including 1,526,173 participants from 42 countries.

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Online supplemental Table e1. Search strategy

Database: PubMed (search engine of MEDLINE)		
#	Searches	Results
1	"Prevalence"[MeSH Terms] OR "Prevalence"[Title/Abstract] OR "Prevalen*"	1,022,952
2	"Diet"[MeSH Terms] OR "Diet"[Title/Abstract] OR "Physical activity"[Title/Abstract] OR "Nicotine exposure"[Title/Abstract] OR "Tobacco"[MeSH Terms] OR "Tobacco"[Title/Abstract] OR "Sleep"[MeSH Terms] OR "Sleep"[Title/Abstract] OR "Body Mass Index"[MeSH Terms] OR "Body Mass Index"[Title/Abstract] OR "Blood lipids"[Title/Abstract] OR "Non-HDL cholesterol"[Title/Abstract] OR "Blood glucose"[MeSH Terms] OR "Blood glucose"[Title/Abstract] OR "Arterial Pressure"[MeSH Terms] OR "Blood Pressure"[MeSH Terms] OR "Arterial Pressure"[Title/Abstract] OR "Blood Pressure"[Title/Abstract]	1,845,640
3	#1 AND #2	150,804
4	*Filters applied: Observational Study, Child: birth-18 years, Humans.*	777
5	Dates: 2020 to February 24, 2023	244

Database: **Scopus**		
#	Searches	Results
1	(TITLE-ABS-KEY (prevalen*)) AND (TITLE-ABS-KEY (diet OR "physical activity" OR "nicotine exposure" OR "tobacco" OR "sleep" OR "body mass Index" OR "blood lipids" OR "non-HDL cholesterol" OR "blood glucose" OR "arterial pressure" OR "blood pressure")) AND (TITLE-ABS-KEY ("observational study")) AND (TITLE-ABS-KEY (child* OR adolescents))	1,783
2	*Filters applied: Article, Human.*	1,545
3	Dates: 2020 to February 24, 2023	221

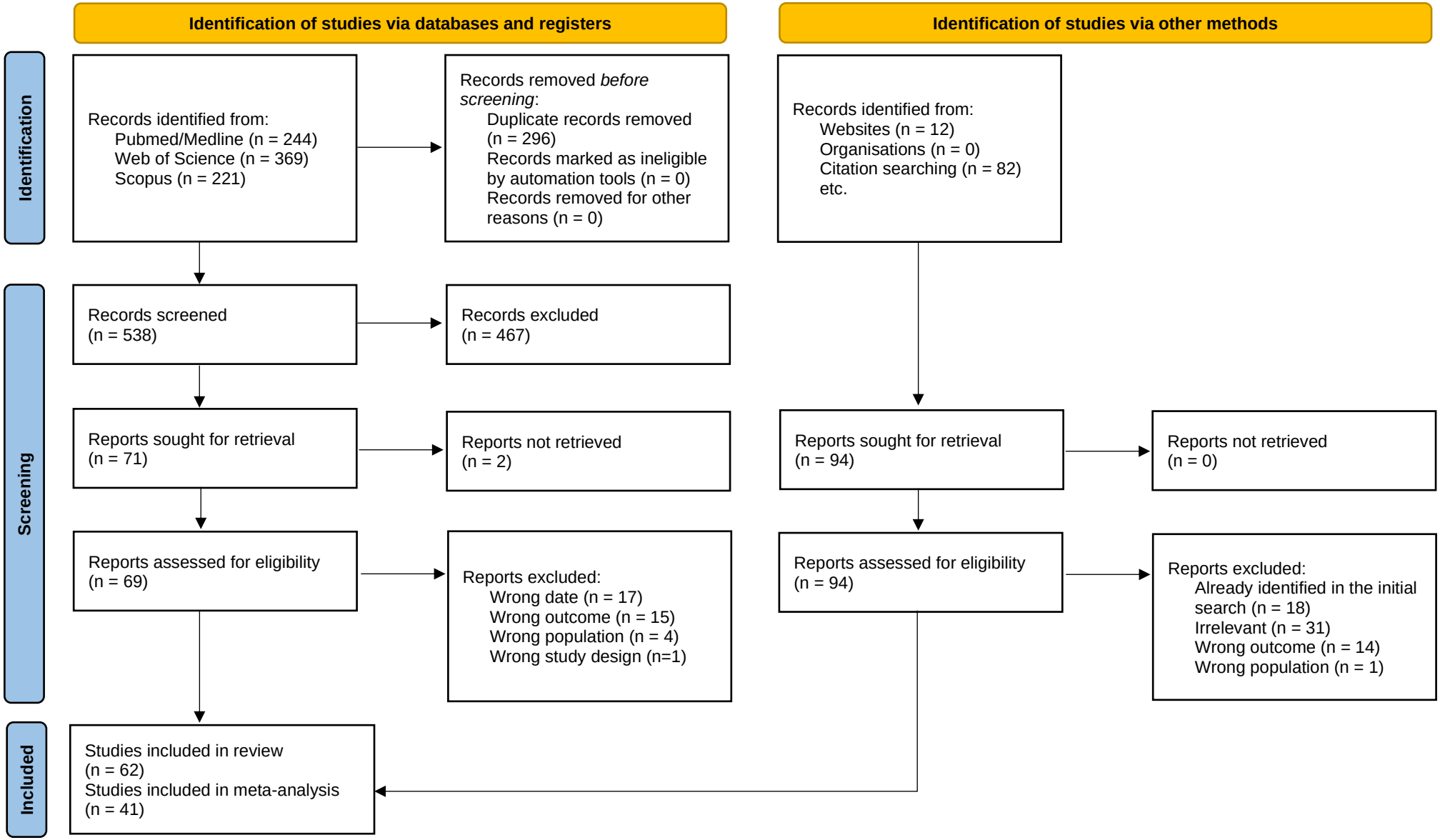
Database: **Web of Science (WOS)**		
#	Searches	Results
1	(Prevalen*) (All Fields) AND (Diet OR "Physical activity" OR "Nicotine exposure" OR Tobacco OR Sleep OR "Body Mass Index" OR "Blood lipids" OR "Non-HDL cholesterol" OR "Blood glucose" OR "Arterial Pressure" OR "Blood Pressure") (All Fields) AND (“Observational Study”) (All Fields) AND (Child* OR Adolescents) (All Fields) AND NOT (Mouse OR Mice OR "Animal Model") (All Fields)	1,303
2	*Filters applied: Article*	1,074
	Timespan: 2020-01-01 to 2023-02-24 (Publication Date)	369

Online supplemental Table e2. Risk of Bias Assessment using the Joanna Briggs Institute (JBI) Critical Appraisal Checklist

Author	1 Sampling Frame	2 Appropriate Sampling	3 Sample Size	4 Subject and Setting	5 Analysis Coverage	6 Valid Measures	7 Standarised Measures	8 Statistical Analysis	9 Response Rate	Total
Androutsos 2021	Y	U	Y	N	Y	U	U	Y	U	4
Al-Hourani 2021	Y	N	Y	Y	N	Y	Y	Y	U	6
Alhowimel 2022	Y	Y	Y	Y	N	N	N	Y	U	5
Al-Rahamneh 2021	Y	U	Y	Y	N	Y	Y	Y	U	6
Almugti 2021	Y	N	Y	N	Y	Y	Y	Y	U	6
Alonso-Martínez 2021	Y	U	N	Y	Y	Y	Y	Y	U	6
Ban 2023	Y	Y	Y	Y	Y	Y	Y	Y	Y	9
Bani-Issa 2020	Y	Y	Y	Y	N	Y	Y	Y	Y	8
Basu 2022	Y	N	Y	N	U	Y	Y	U	U	4
Berki 2021	Y	N	Y	Y	Y	Y	Y	Y	U	7
Bronikowska 2021	Y	Y	N	Y	Y	Y	U	Y	U	6
Chaffee 2021	Y	N	Y	Y	Y	Y	Y	Y	Y	8
Chi 2020	Y	U	Y	Y	Y	Y	Y	Y	Y	8
Curatola 2022	Y	N	N	Y	Y	Y	Y	Y	U	6
El Refay 2021	Y	N	Y	Y	Y	N	U	Y	U	5
Francisco 2020	Y	Y	Y	Y	Y	N	U	Y	U	6
Ghanamah 2021	Y	N	N	Y	N	N	U	Y	U	3
Gilic 2021	Y	N	Y	N	Y	Y	Y	Y	U	6
Giorgio 2020	Y	N	N	Y	U	Y	Y	Y	Y	6
Greier 2021	Y	N	N	N	Y	Y	Y	Y	U	5
He 2022	Y	Y	Y	Y	Y	Y	Y	Y	Y	9
Hyunshik 2021	Y	N	U	Y	Y	Y	Y	Y	Y	7
Jáuregui 2021	Y	N	Y	Y	Y	Y	Y	Y	Y	8
Jia 2021	Y	N	Y	Y	N	Y	Y	Y	U	6
Kang 2020	Y	U	N	Y	Y	Y	Y	Y	Y	7
Kovacs 2022	Y	N	Y	Y	Y	Y	U	Y	Y	7
Liu 2020	Y	N	Y	Y	Y	Y	Y	Y	Y	8
López-Bueno 2020	Y	N	Y	Y	Y	Y	Y	Y	Y	8
López-Gil 2021	Y	N	Y	Y	Y	Y	Y	Y	Y	8

Łuszczk 2021	Y	U	Y	Y	Y	Y	U	Y	U	6
Medrano 2020	Y	Y	Y	Y	Y	Y	Y	Y	N	8
Mekkawy 2021	Y	U	Y	Y	Y	Y	Y	Y	U	7
Metwally 2020	Y	Y	Y	Y	Y	Y	Y	Y	U	8
Moore 2021	Y	U	Y	Y	Y	Y	Y	Y	Y	8
Mulugeta 2021	Y	U	Y	Y	Y	Y	Y	Y	U	7
Nyström 2020	Y	U	U	Y	Y	Y	Y	Y	U	6
Okely 2021	Y	U	Y	Y	Y	Y	Y	Y	Y	8
Palermi 2022	Y	N	N	Y	Y	Y	Y	Y	Y	7
Parker 2021	Y	Y	Y	Y	N	Y	Y	Y	N	7
Pelham 2021	Y	U	Y	Y	Y	Y	U	Y	N	6
Pierce 2022	Y	U	Y	Y	Y	Y	Y	Y	U	7
Puteikis 2022	Y	N	Y	Y	N	Y	Y	Y	Y	7
Qiu 2021	Y	Y	N	Y	Y	Y	Y	Y	N	7
Ranjbar 2021	Y	U	Y	Y	Y	Y	Y	Y	Y	8
Rogés 2021	Y	U	U	Y	Y	Y	Y	Y	N	6
Rojas 2022	Y	Y	N	Y	N	Y	Y	Y	U	6
Ruíz-Roso 2020	Y	N	N	Y	Y	Y	Y	Y	Y	7
Schmidt 2020	Y	Y	Y	N	Y	Y	Y	Y	N	7
Shalitin 2022	Y	U	Y	Y	Y	Y	Y	Y	U	7
Song 2023	Y	U	Y	Y	Y	Y	Y	Y	U	7
Sugimoto 2022	Y	N	Y	Y	Y	Y	Y	Y	Y	8
Sugimoto 2023	Y	N	Y	Y	Y	Y	Y	Y	N	7
Tandon 2021	Y	U	Y	Y	Y	Y	Y	Y	U	7
Tanveer 2022	Y	N	U	Y	Y	Y	Y	Y	U	6
Thorisdottir 2021	Y	U	Y	Y	Y	Y	Y	Y	Y	8
Top 2022	Y	N	Y	Y	Y	Y	Y	Y	U	7
Yazew 2022	Y	N	Y	Y	Y	Y	U	Y	U	6
Wang 2022	Y	Y	Y	Y	Y	Y	Y	Y	Y	9
Wen 2021	Y	Y	Y	N	Y	Y	Y	Y	U	7
Zengin 2020	Y	U	N	Y	Y	Y	Y	Y	Y	7
Zhai 2021	Y	U	Y	U	U	Y	Y	Y	U	5
Zhou 2021	Y	U	Y	Y	N	Y	Y	Y	U	6

Online supplemental eFigure2. PRISMA Flow Diagram



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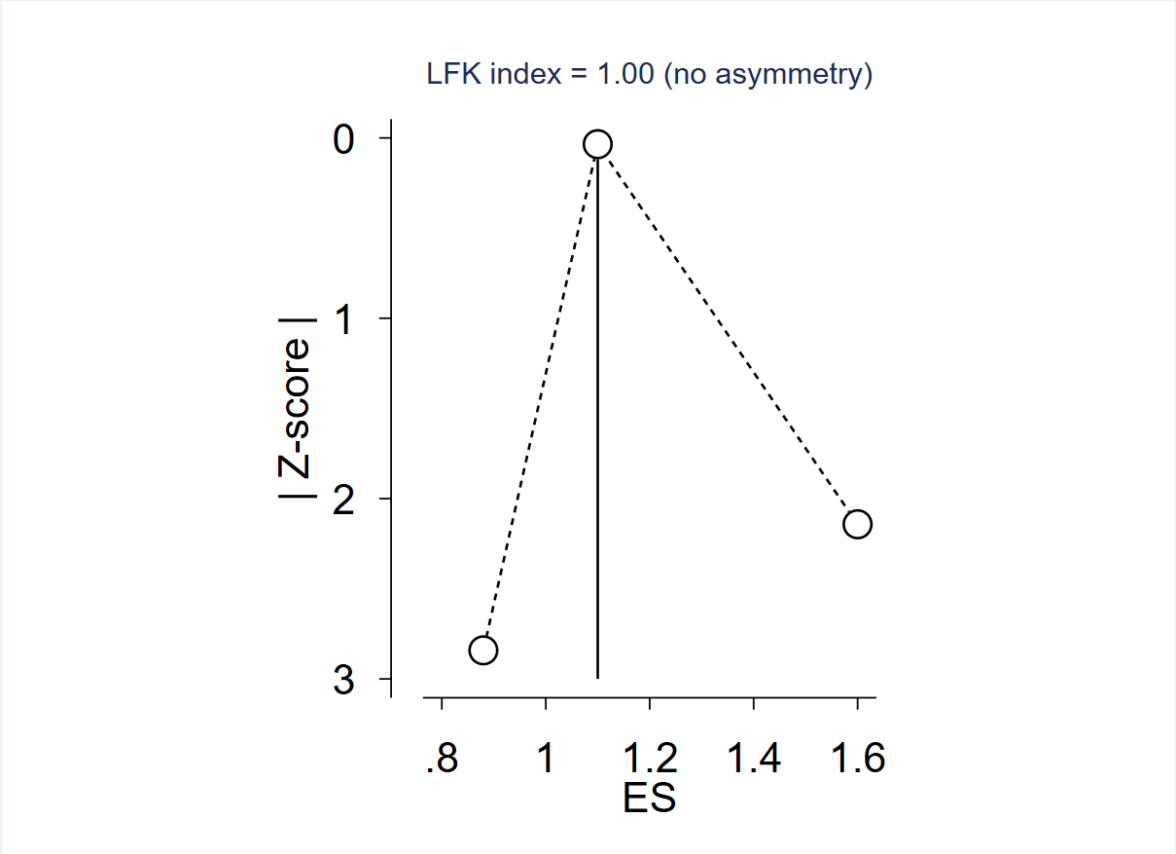

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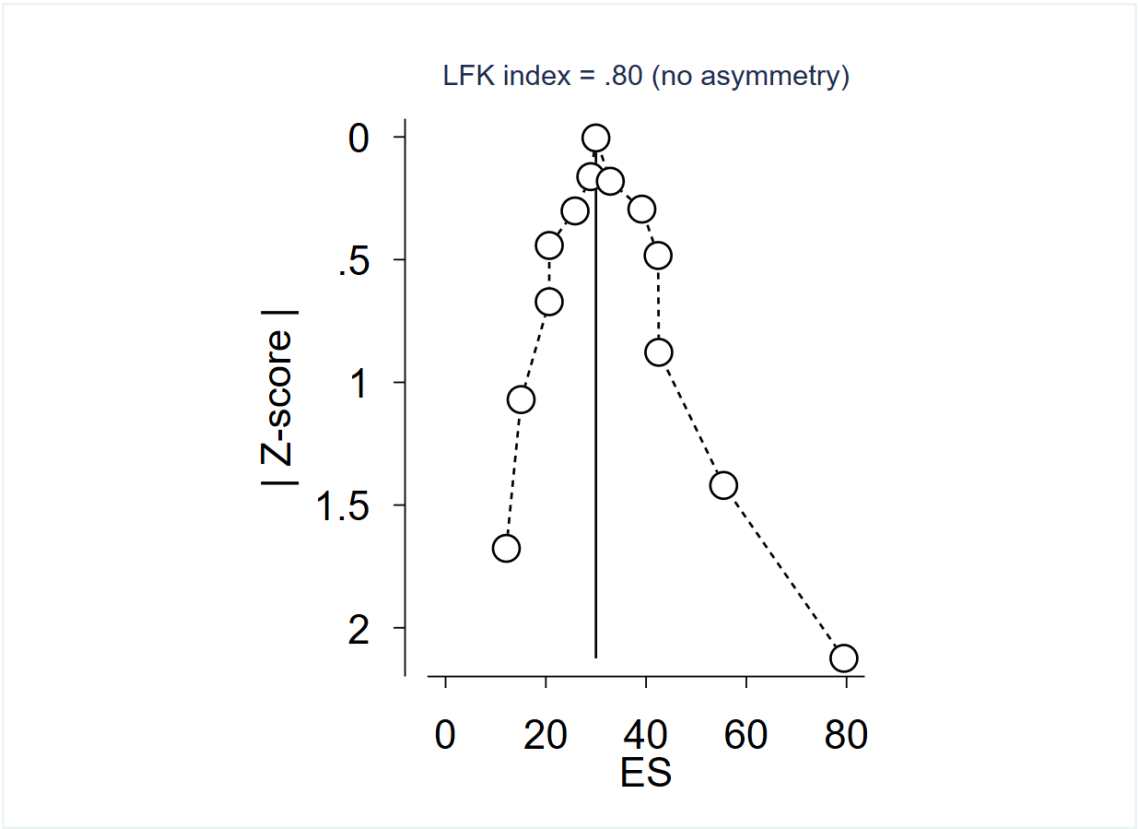

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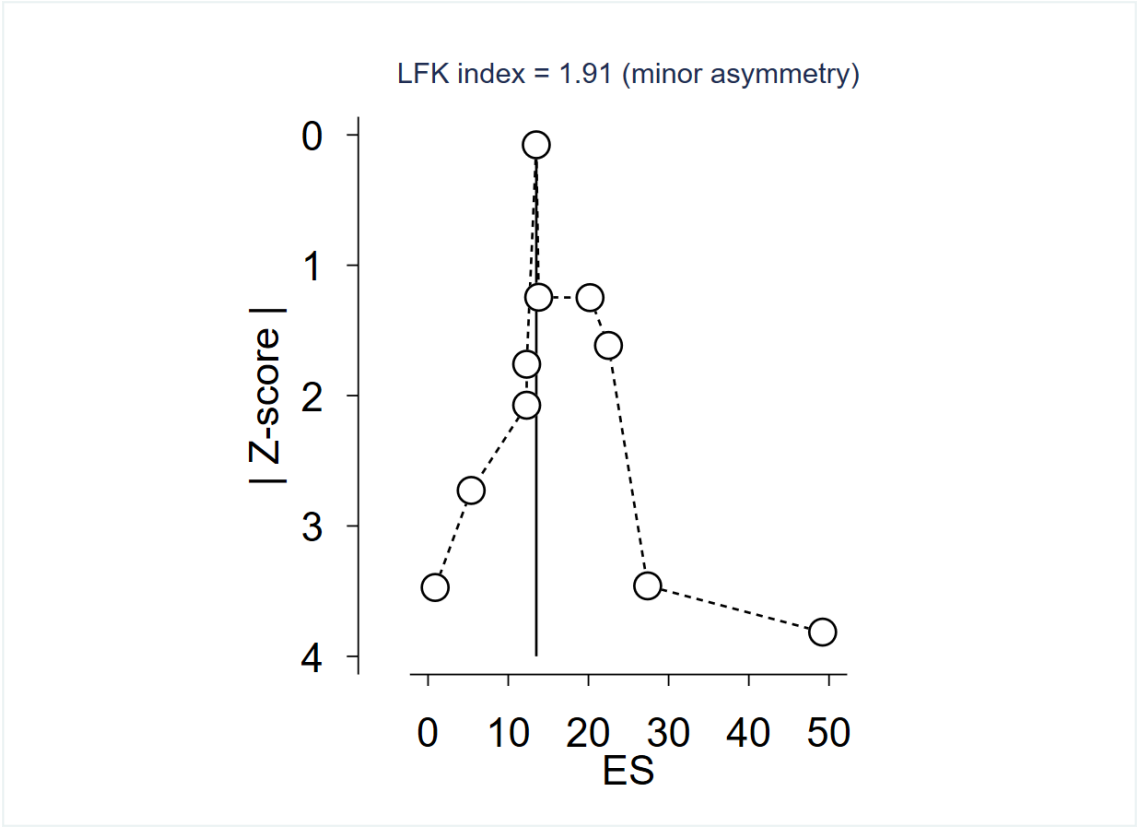

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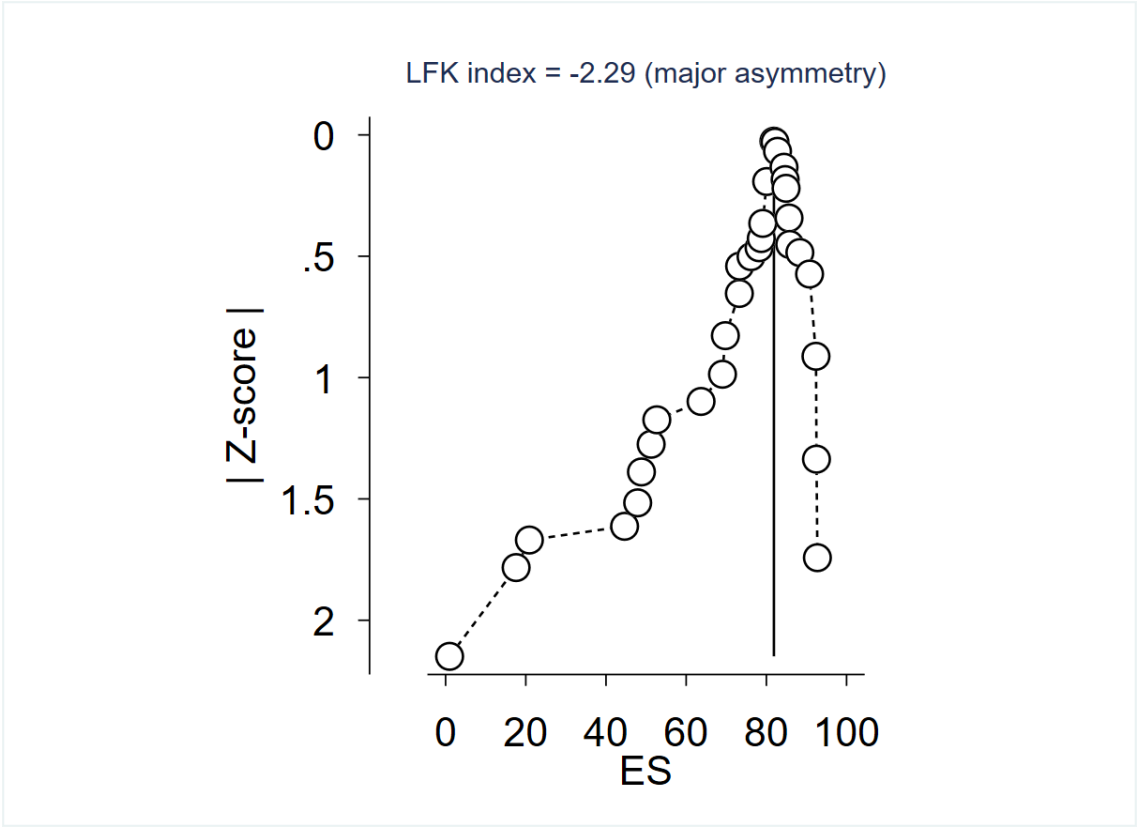

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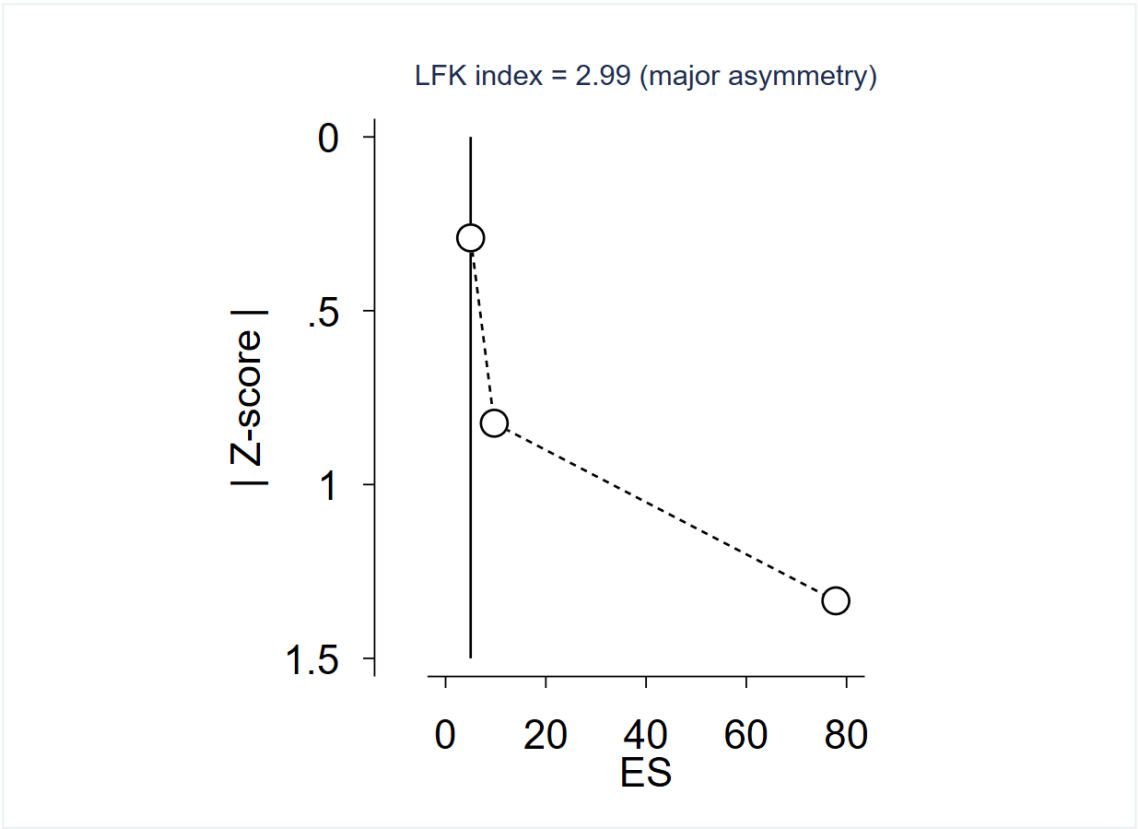

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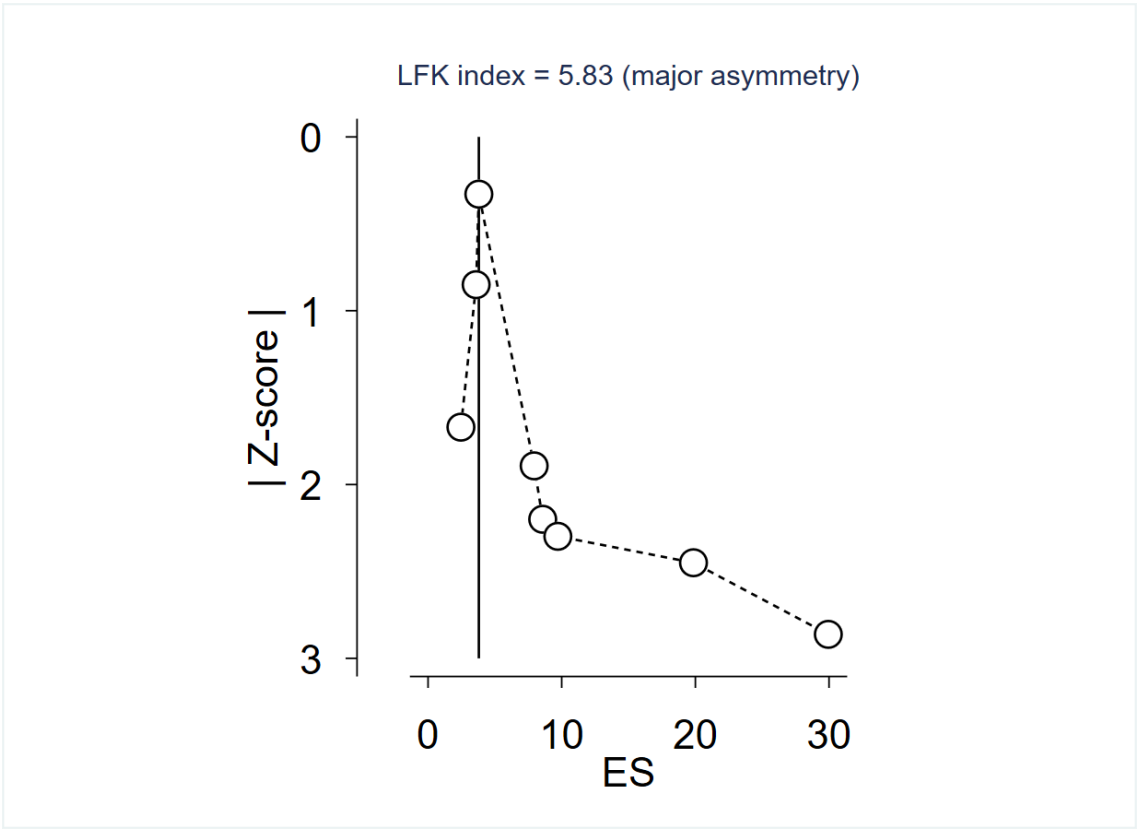

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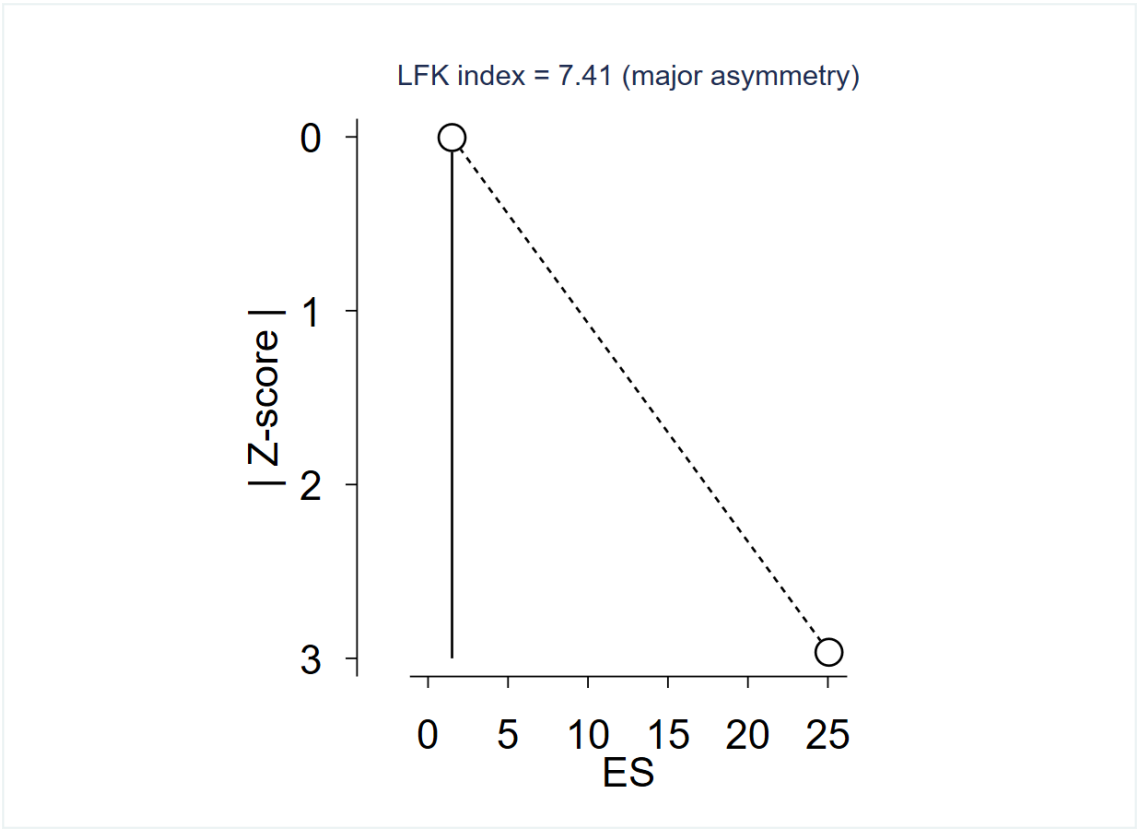

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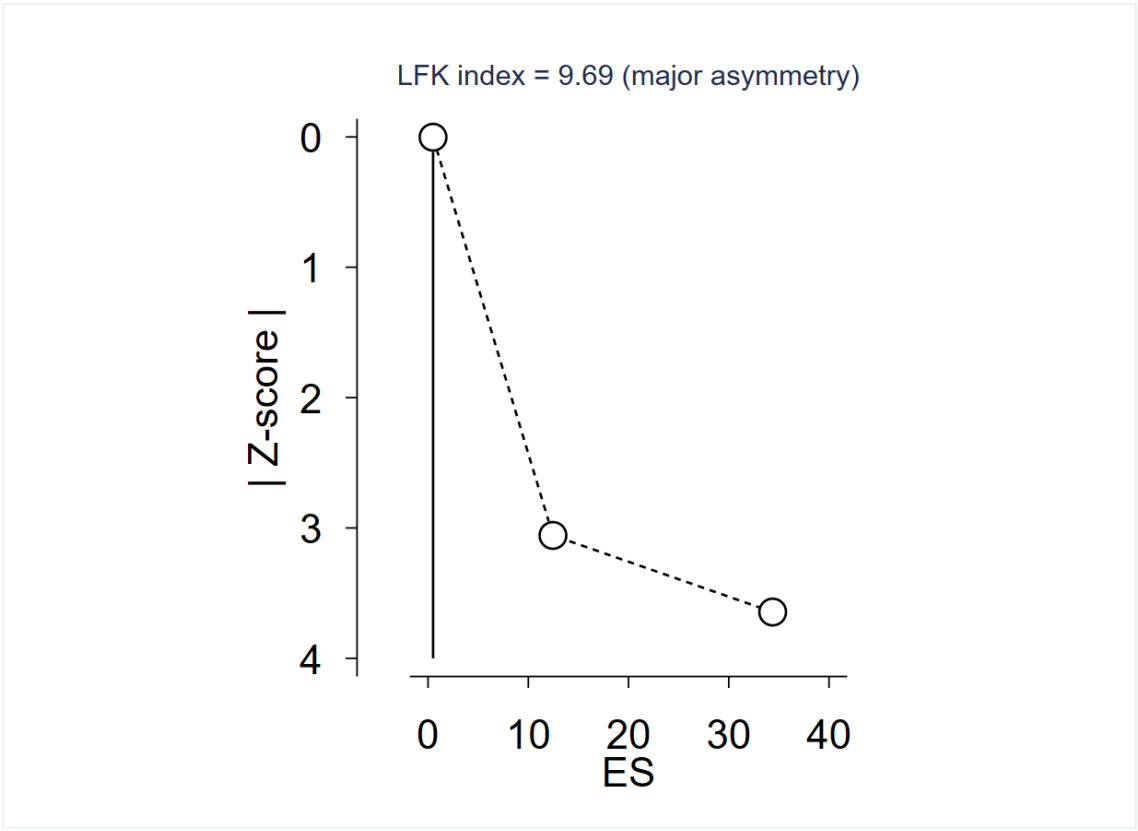

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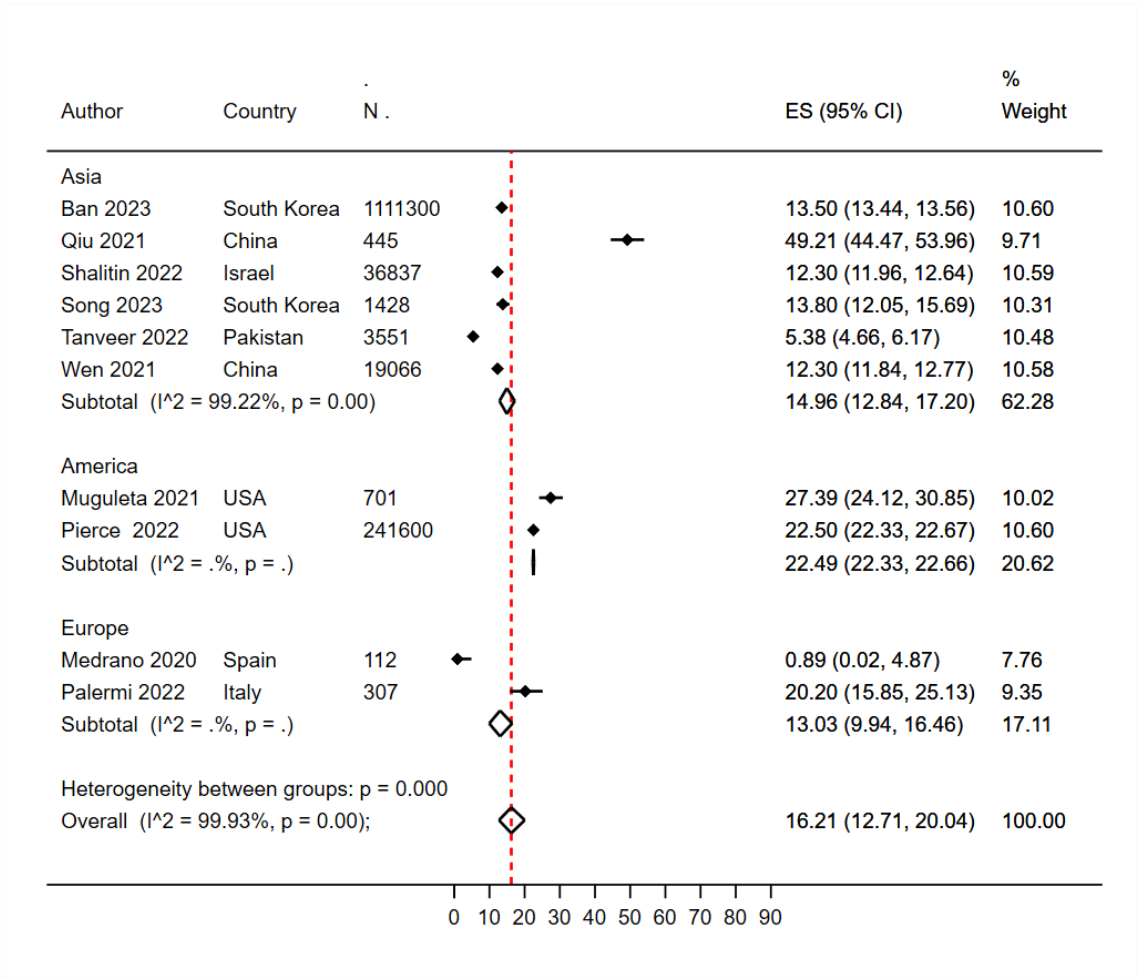

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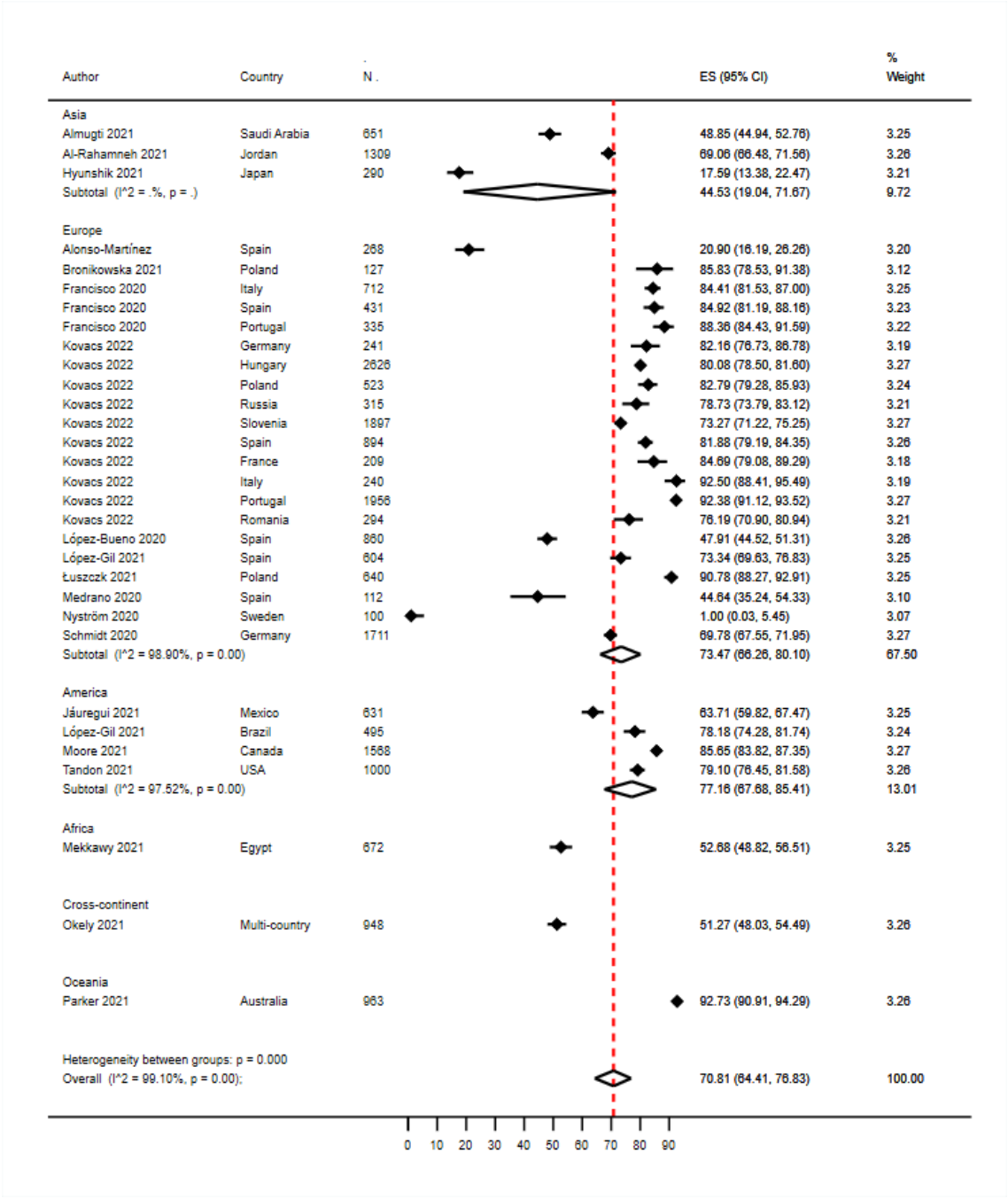

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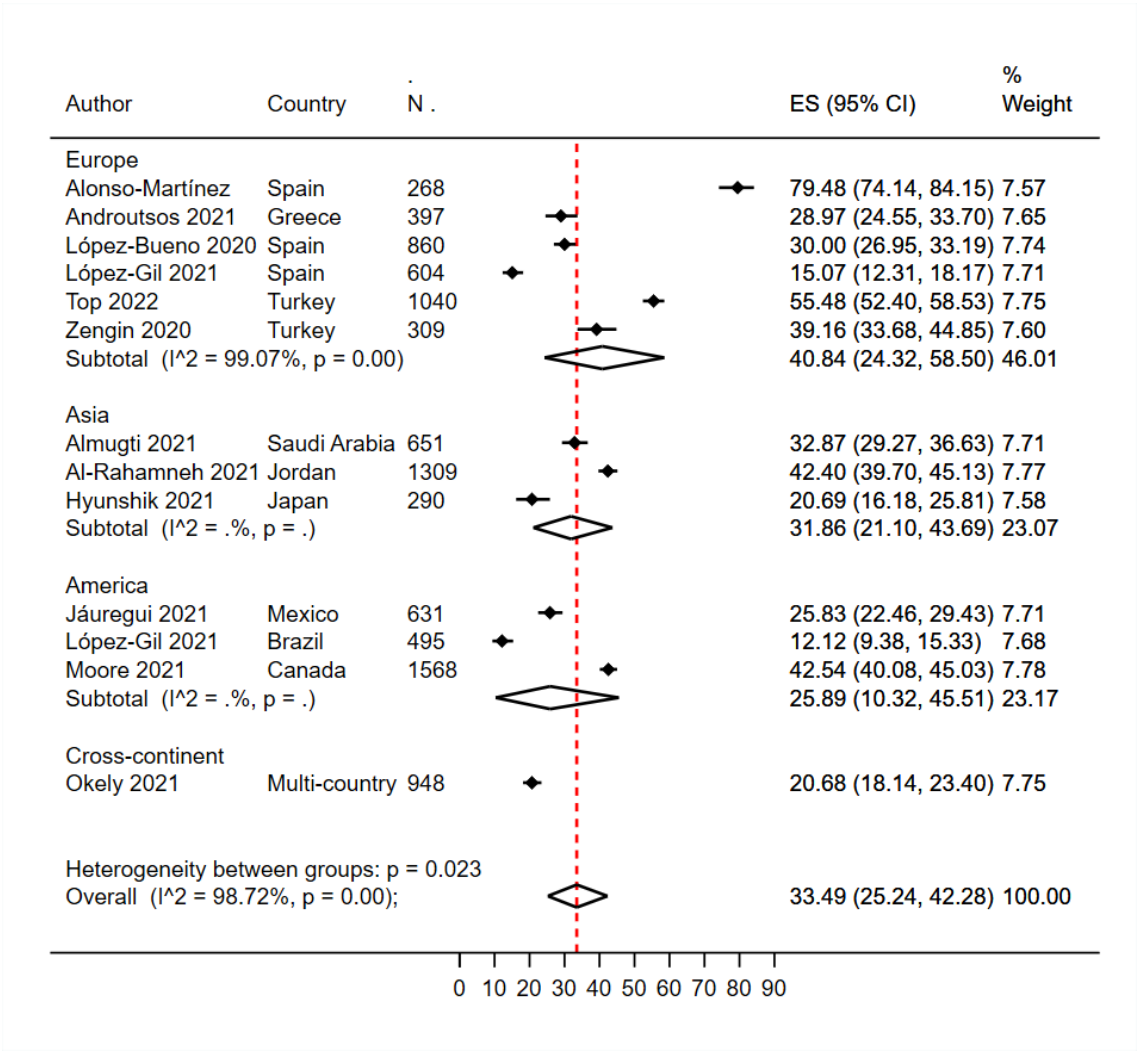

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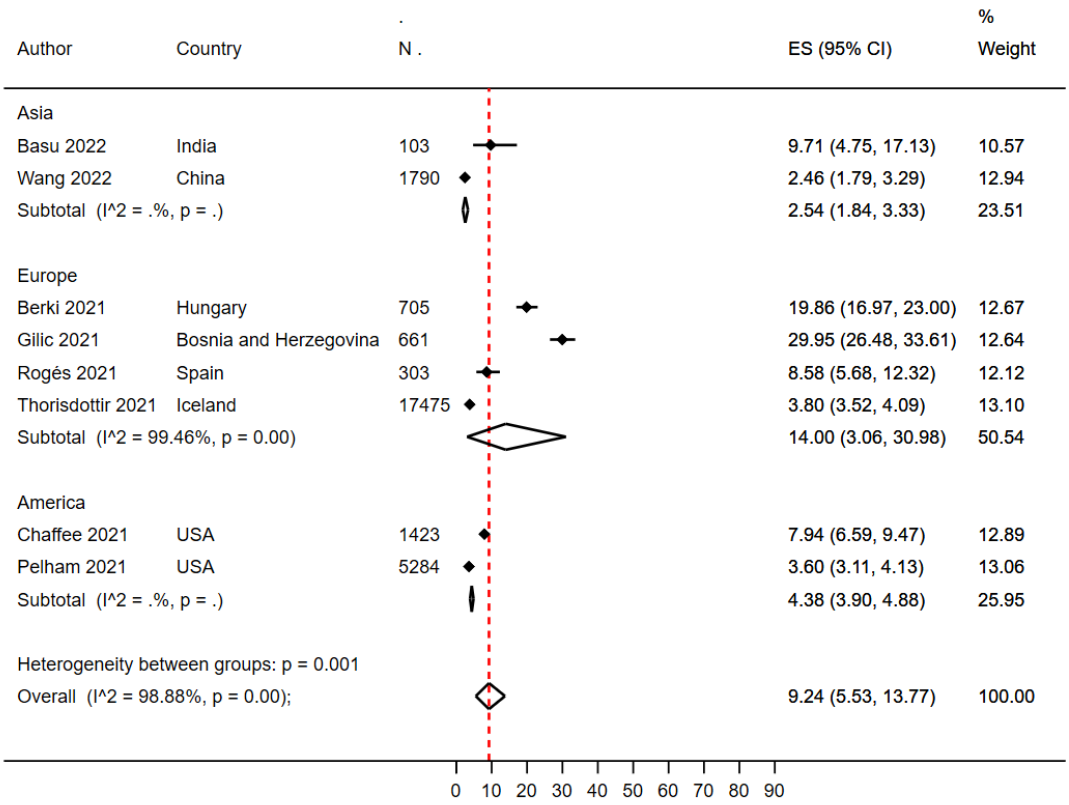
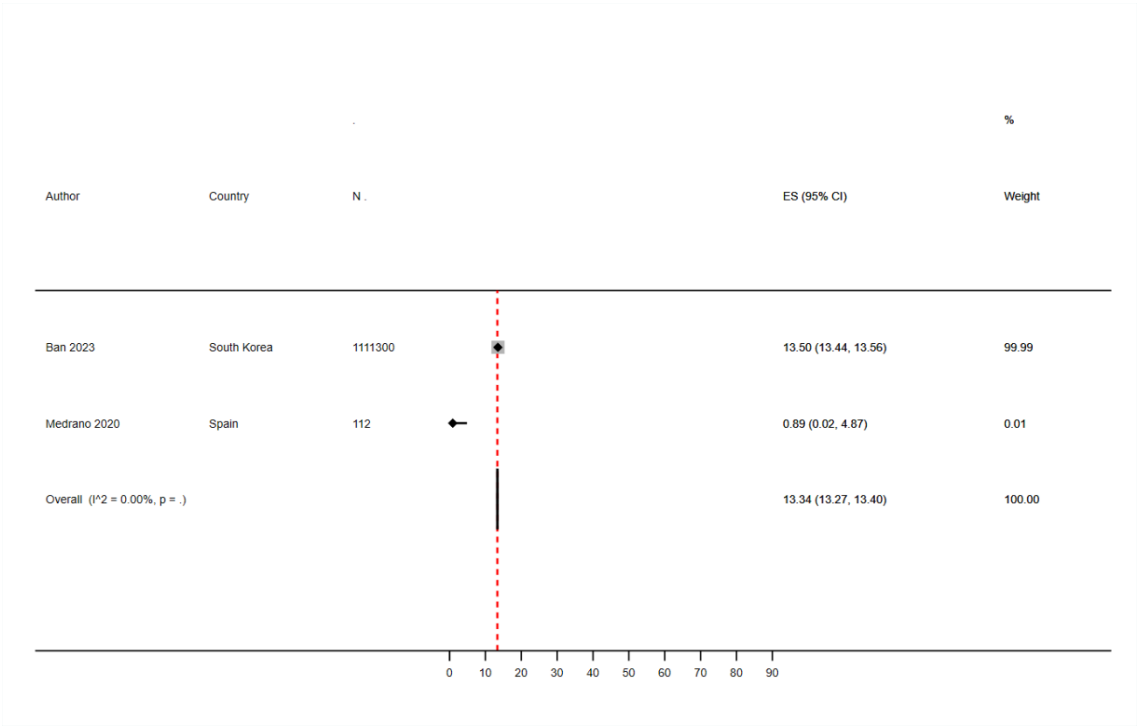


Online supplemental eFigure 14. Forest plot of prevalence of obesity with high quality studies.



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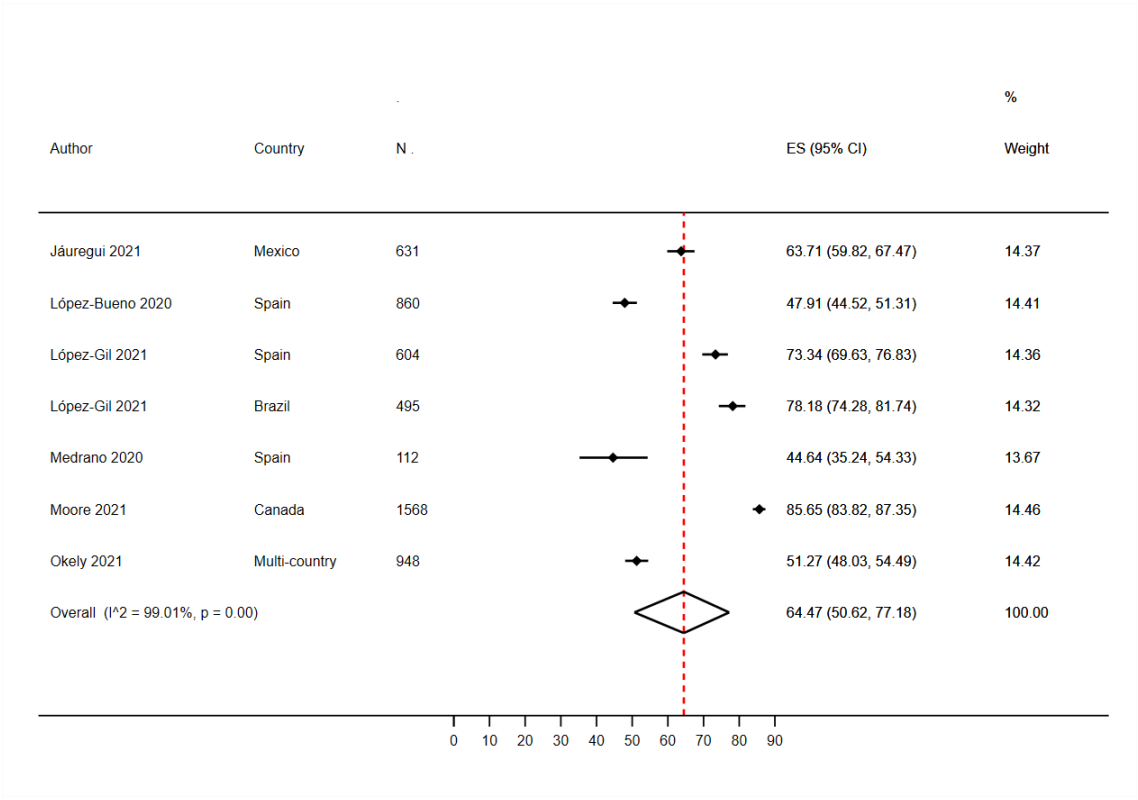

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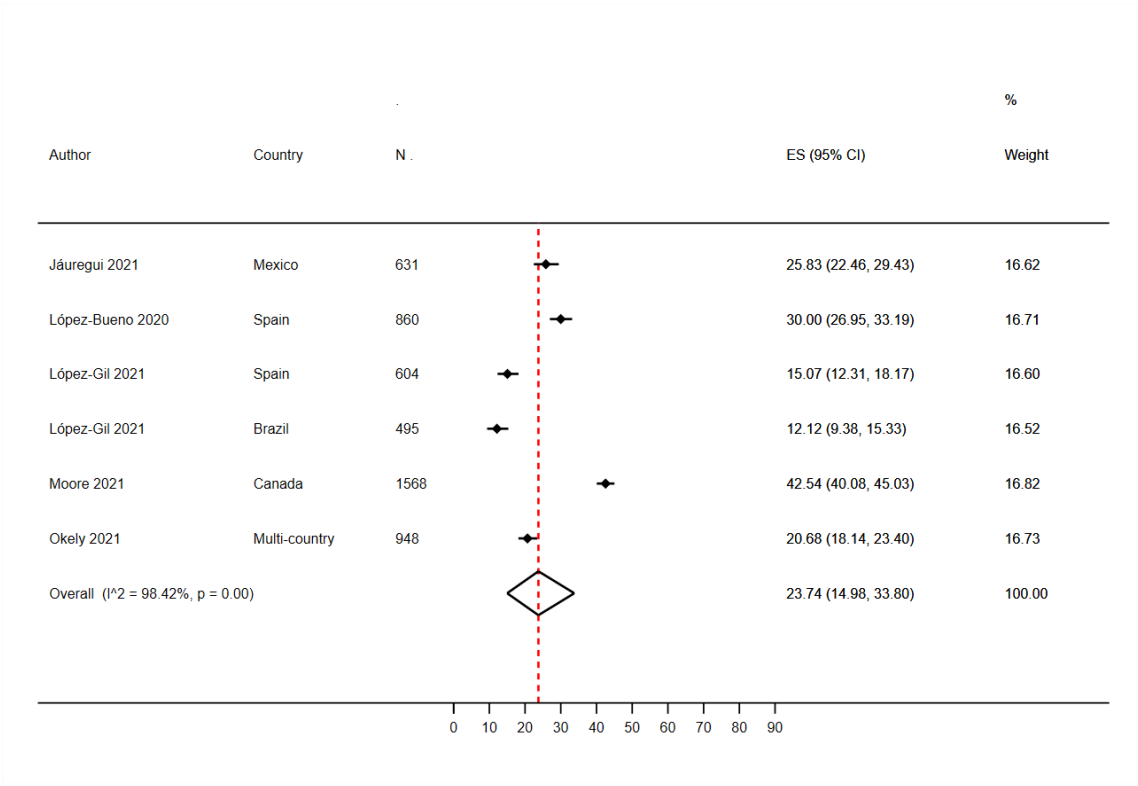
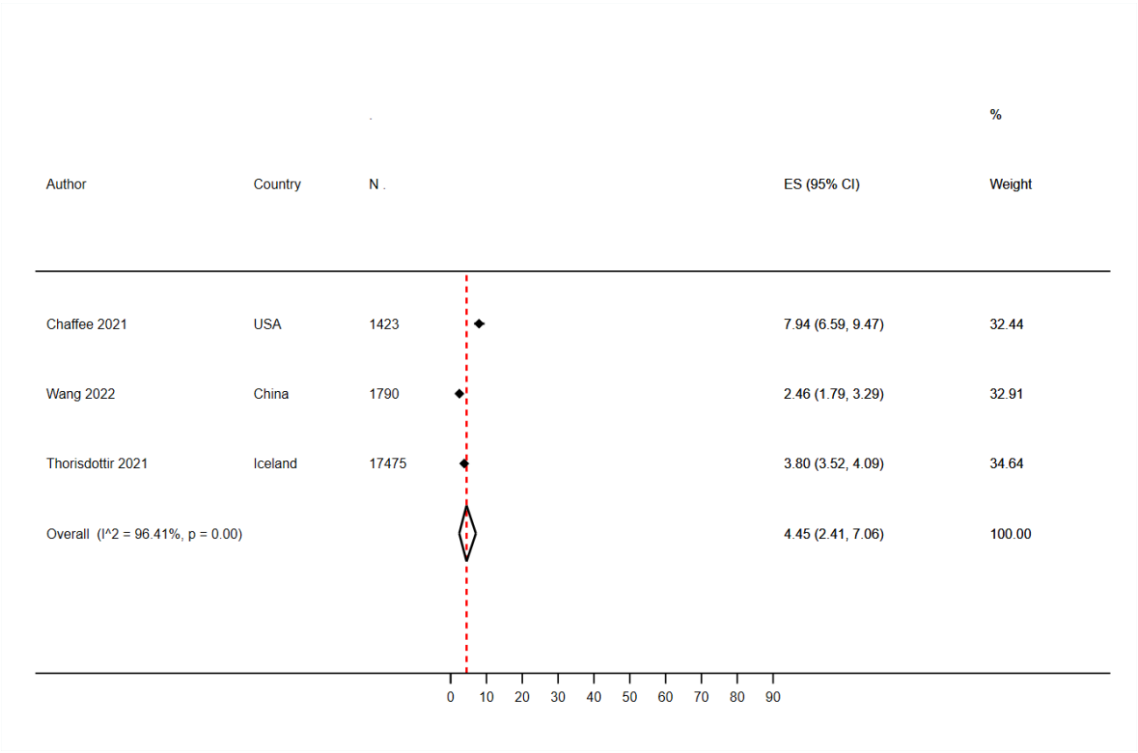
Online supplemental eFigure 17. Forest plot of prevalence of smoking with high quality studies.