

Supplementary Table II. The detailed assessment of bias risk.

Quality assessment of before-after (Pre-Post) studies without a control group using the NIH assessment tool

Assessment items Study	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Overall assessment
Zhao et al. 2024	YES	YES	YES	YES	YES	YES	YES	NR	YES	YES	YES	NA	Good
Youssef et al. 2023	YES	YES	YES	CD	YES	YES	YES	NR	YES	YES	NR	NA	Fair
Huang et al. 2023	YES	YES	YES	YES	YES	YES	YES	NR	YES	YES	CD	NA	Good
Wang et al. 2022	YES	YES	YES	CD	NO	YES	YES	NR	YES	YES	NR	NA	Fair
Castelo et al. 2017	YES	YES	YES	CD	NO	YES	YES	NR	YES	YES	YES	NA	Fair
Liu et al. 2023	YES	YES	YES	CD	NO	YES	YES	NR	YES	YES	YES	NA	Fair
Geng et al. 2022	YES	YES	YES	CD	NO	YES	YES	NR	YES	YES	NR	NA	Fair
Zhan et al. 2023	YES	YES	YES	CD	NO	YES	YES	NR	YES	YES	NR	NA	Fair
Apalla et al. 2024	YES	YES	YES	YES	NO	YES	YES	NR	YES	YES	NR	NA	Fair
Liu et al. 2019	YES	YES	YES	CD	NO	YES	YES	NR	YES	YES	NR	NA	Fair
Öksüm et al. 2024	YES	YES	YES	YES	NO	YES	YES	NR	NR	YES	YES	NA	Fair
Morales et al. 2019	YES	YES	YES	YES	NO	YES	YES	NR	YES	YES	YES	NA	Good
Craiglow et al. 2017	YES	YES	YES	CD	YES	YES	YES	NR	YES	YES	NR	NA	Fair
Craiglow et al. 2019	YES	YES	YES	CD	NO	YES	YES	NR	YES	YES	NR	NA	Fair
Dai et al. 2019	YES	YES	YES	YES	NO	YES	YES	NR	YES	YES	NR	NA	Fair
Putterman et al. 2018	YES	YES	YES	CD	YES	YES	YES	NR	YES	YES	NR	NA	Fair
Jerjen et al. 2021	YES	YES	YES	YES	YES	YES	YES	NR	YES	YES	NO	NA	Good
Moussa et al. 2023	YES	YES	YES	YES	YES	YES	YES	NR	YES	YES	NO	NA	Good
Asfour et al. 2023	YES	YES	YES	YES	YES	YES	YES	NR	YES	YES	YES	NA	Good

Gowda et al. 2024	YES	YES	YES	CD	NO	YES	YES	NR	YES	YES	YES	NA	Fair
Picone et al.2024	YES	YES	YES	CD	YES	YES	YES	NR	YES	YES	YES	NA	Good

NIH: National Institutes of Health (NIH)

Abbreviations: CD, cannot determine.

NA: not applicable; NIH: National Institutes of Health; NR not reported.

Quality was rated as poor (0–4 out of 12 questions), fair (5–8 out of 12 questions), or good (9–12 out of 12 questions)

Quality assessment non-randomized studies and cohort studies using NOS

	Selection				Comparability	Outcome			Overall Score
	Representativeness of the exposed cohort	Selection of the non-exposed cohort	Ascertainment of exposure	Demonstration that outcome of interest was not present at start of study	Comparability of cohorts based on the design or analysis	Assessment of outcome	Was follow-up long enough for outcomes to occur	Adequacy of follow-up of cohorts	
Zhou et al. 2023	1	1	1	0	2	1	1	1	8

NOS Newcastle-Ottawa Scale

The non-randomized study awarded 8 scores (a full mark: 9 scores).

Quality assessment results of randomized controlled trials, revised Cochrane Risk of Bias 2 tool

Study	Randomization process	Deviations from intended interventions	Missing outcome data	Measurement of the outcome	Selection of the reported result	Overall Bias
Hordinsky et al. 2023	Low	Some concerns*	Low	Low	Low	Some concerns

For the randomized controlled trial (RCT), the quality was affected due to some concerns of deviations from intended interventions. In that study, blinding of interventions is incomplete, but these deviations were not likely to have affected the outcome as evaluation results by objective data.