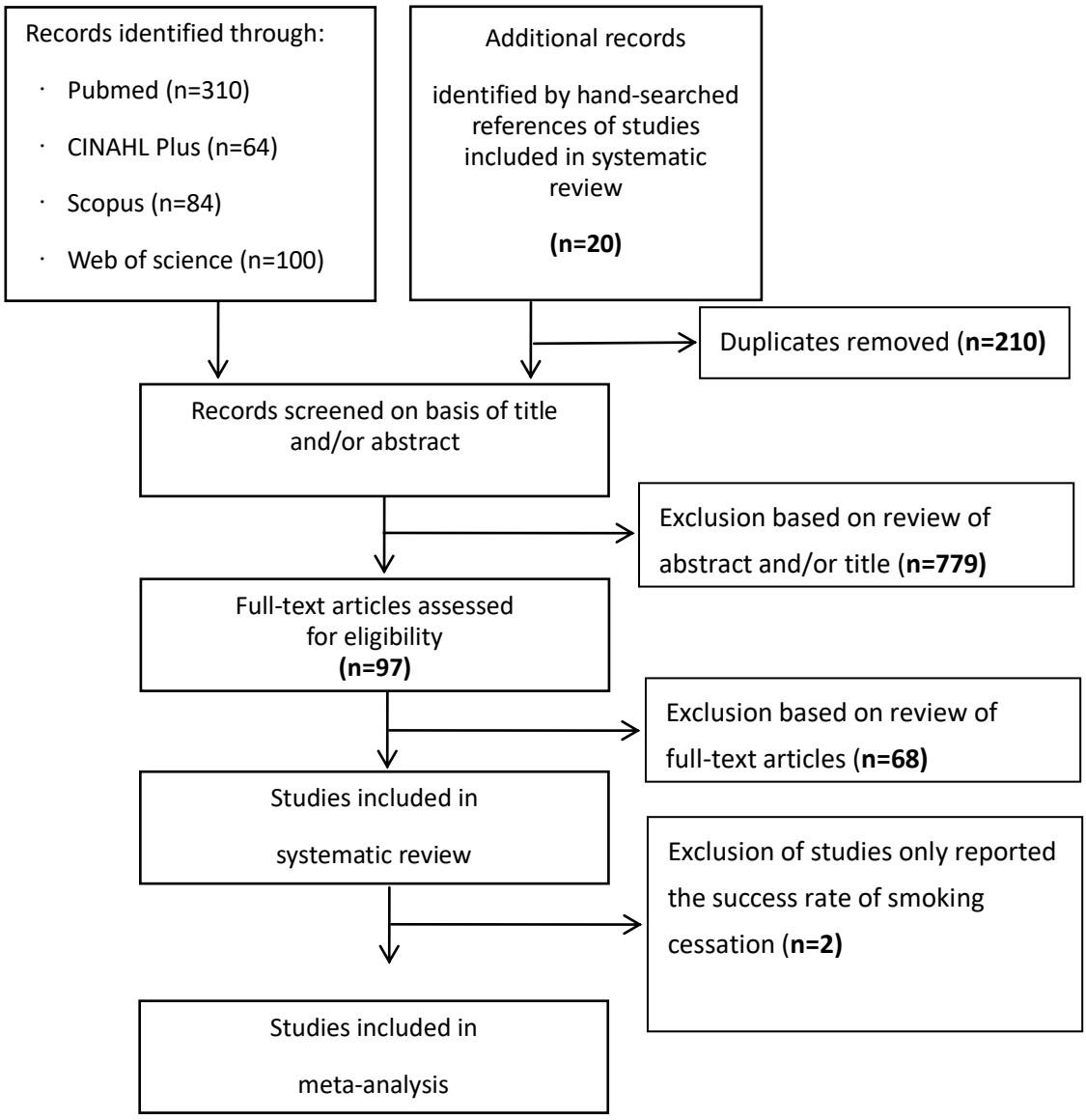
Figure 1. Flow chart of articles identification



Note: The search terms were: [‘factors’ or ‘predictors’] and [‘smoking cessation’ or ‘smoking cessation interventions’ or ‘quit smoking’ or ‘stop smoking’]. The terms of [‘Japan’ or ‘Japanese’] were further limited when the papers were searched in four English electronic databases. We also searched the reference lists of publications included in the systematic review.

Table 1. Overall summary of studies reported success of quitting smoking in the Japanese Smoking Cessation Treatment program

First Author, Year	Language	Territory	No. of subjects	The success rate of smoking cessation		Factors associated with success of smoking cessation[a]	
				12 weeks	1 year	12 weeks	1 year
Uchida, 2007	Japanese	Kansai	116	61.2%	NA[b]	Gender, Tobacco Dependence (TDS), number of cigarettes per day, cohabitant with smokers.	NA
Yamamoto, 2007	Japanese	Tohoku	1627	54.0%	NA	NA	NA
Kurioka, 2008; 2009	Japanese	Kansai	61	47.5%	36.1%	Number of cigarettes per day, number of sessions participating to smoking cessation treatment (SCT)	Cohabitant with smokers
Ito, 2008	Japanese	Kyushu	105	84.8%	46.7%	TDS	Gender, TDS, having present diseases
Hirata, 2009	Japanese	Kansai	496	57.1%	NA	NA	NA
Tanaka, 2010	Japanese	Kyushu	100	52.0%	NA	TDS, completion of SCT program	NA
Shinoda, 2011	Japanese	Chubu	199	NA	NA	NA	
Sawayama,2011	Japanese	Chugoku	66	71.2%	48.5%	Age, age at smoking initiation, Subjective symptoms.	NA
Taniguchi, 2011	Japanese	Chubu	372	45.2%	NA	Gender, self-efficacy, varenicline	NA
Sato, 2011	Japanese	Tohoku	201	51.2%	NA	NA	NA
Satoh, 2012	Japanese	Tohoku	276	67.6%	17.8%	Gender	Gender
Miyagi, 2012	Japanese	Kanto	87	79.3%	64.4%	Number of sessions participating to SCT.	Number of sessions participating to SCT, Health counseling, Anxiety.

Okazaki, 2013	Japanese	Kyushu	230	72.2%	NA	Age, gender, having present diseases, having mental diseases, number of cigarettes per day.	NA
Yoshii, 2013	Japanese	Kyushu	133	66.2%	NA	Gender, side effects of varenicline, having mental diseases	NA
Nobata, 2013	Japanese	Chubu	133	65.4%	30.1%	Gender,weight, duration of SCT, age at smoking initiation.	NA
Taniguchi, 2013	English	Chubu	283	82.7%	68.6%	NA	NA
Iwaoka, 2014	English	Kanto	86	80.2%	NA	NA	NA
Yamazaki, 2015	Japanese	Hokkaido	125	60.8%	NA	NA	NA
Yasuda, 2015	Japanese	Kanto	130	71.5%	NA	Brinkman index, subjective symptoms, completion of SCT program.	NA
Iwaoka, 2016	English	Kanto	81	76.5%	NA	NA	NA
Shimadu, 2016	English	Chubu	193	46.6%	36.8%	NA	NA
Itakura, 2016	Japanese	Kanto	81	54.3%	NA	Motivation to quit smoking, number of sessions participating to SCT, self-efficacy.	
Ishii, 2017	Japanese	Kanto	190	70.5%	NA	**Male:** height, weight, self-efficacy, hypertension.	NA
Taniguchi,2017	English	Chubu	1320	41.0%	19.0%	Age, gender, FTND, desire to smoke, age at smoking initiation, previous abstinence, motivation to quit smoking, self-efficacy.	Desire to smoke.
Taniguchi H, 2018	Japanese	Kyushu	110	41.8%	25.5%	NA	Social nicotine dependence, self-efficacy, number of cigarettes per day.

Taniguchi C, 2018	English	Chubu	488	81.6%	NA	Self-efficacy	NA
Sugiyama,2018	Japanese	Kansai	230	68.3%	NA	Age, Brinkman index, number of sessions participating to SCT, completion of SCT program, having mental diseases, side effects of varenicline, decrement or discontinuation of varenicline	NA
Tomioka, 2019	English	Kansai	813	66.5%	NA	Age, number of cigarettes per day, duration of smoking years, exhaled CO concentration, having mental diseases.	NA

[a] factors are statistically associated with smoking cessation reported in the papers.

[b] Not available.

Definition of smoking status

In this review, success of smoking cessation at 12 weeks is defined as smoking abstinence at the end of SCT program (12 weeks) by clinical diagnosis or self-reported which is referred in the included studies. Maintained cessation at 1 year is defined as smoking abstinence by self-reported which is also referred in the included studies. In addition, to facilitate the comparison of the success rate among different studies at 12 weeks and/or 1 year, we recalculate the success rate of smoking cessation based on the extracted accurate data.

Figure 2. Forest plot of gender at 12 weeks

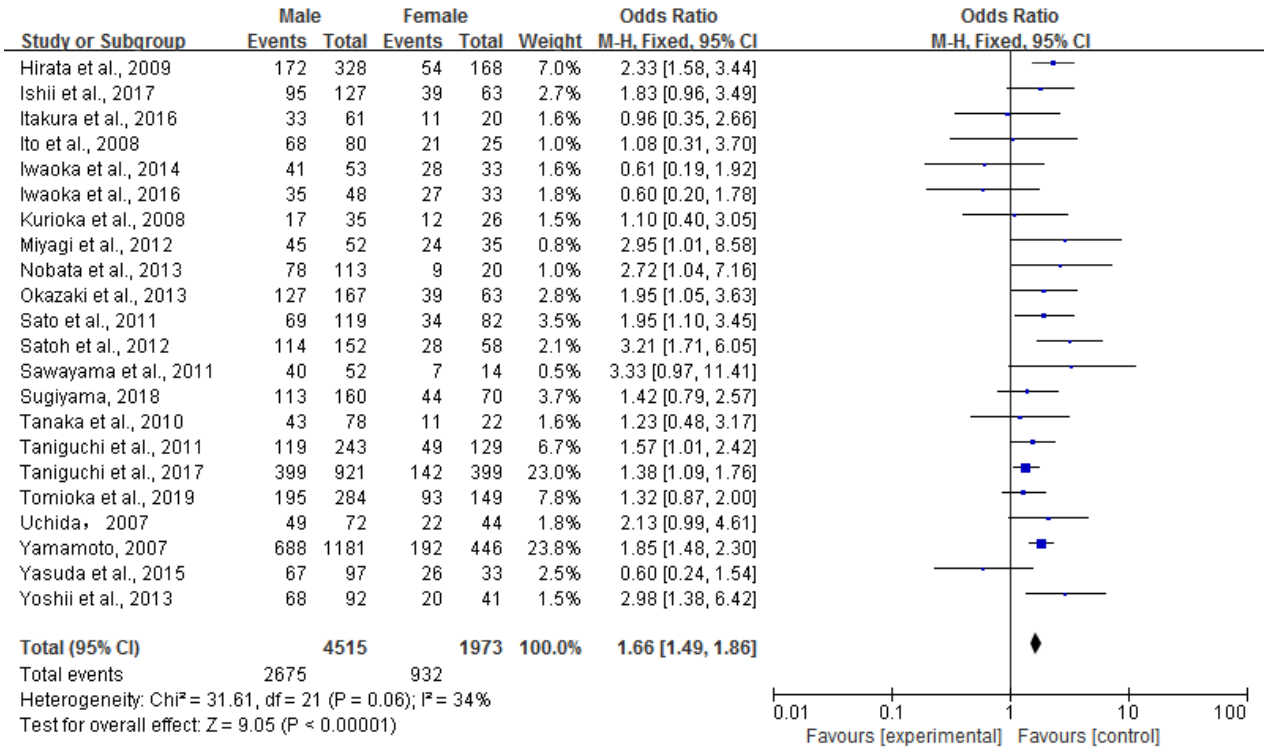


Figure 3. Funnel plot of gender at 12 weeks

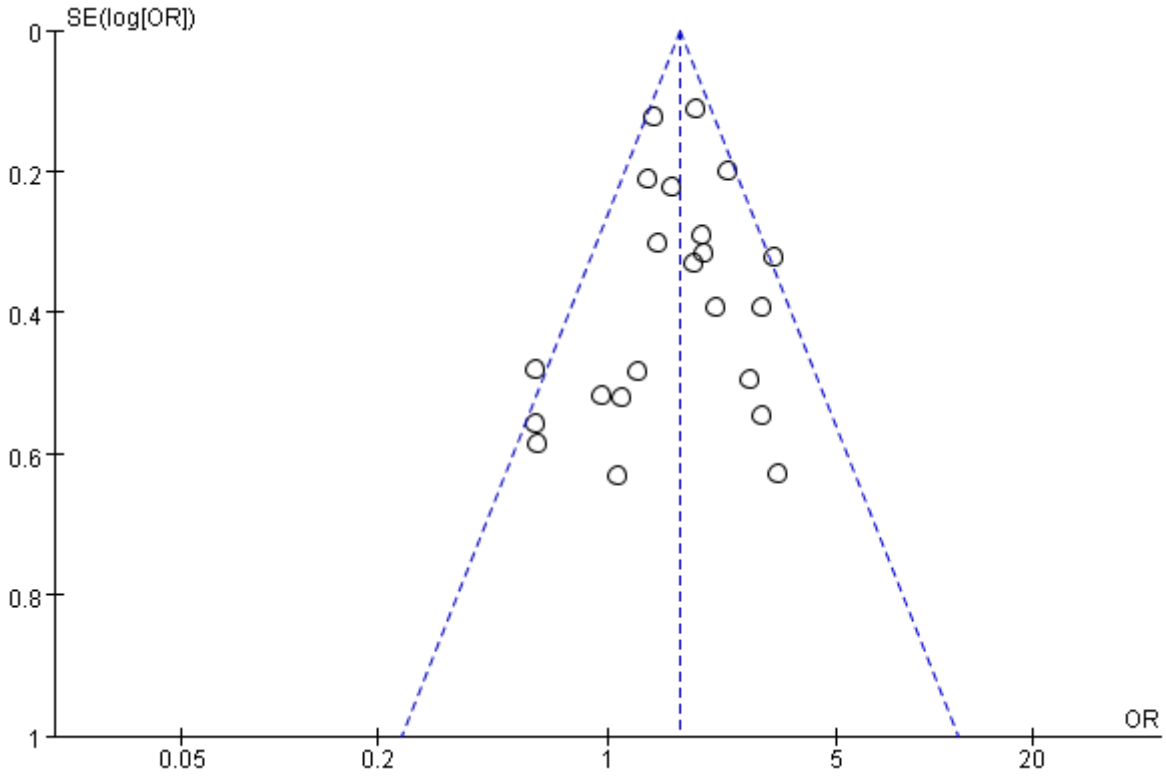


Figure 4. Forest plot of gender at 1 year

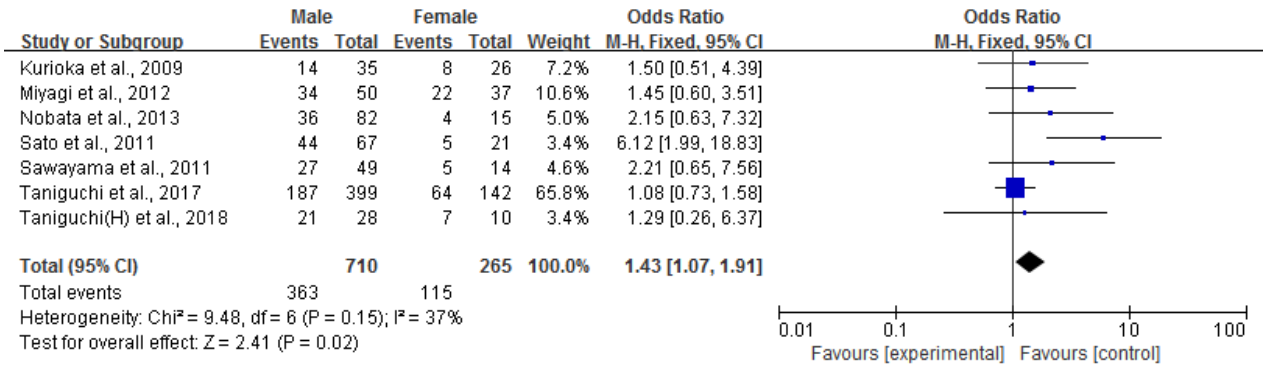


Figure 5. Funnel plot of gender at 1 year

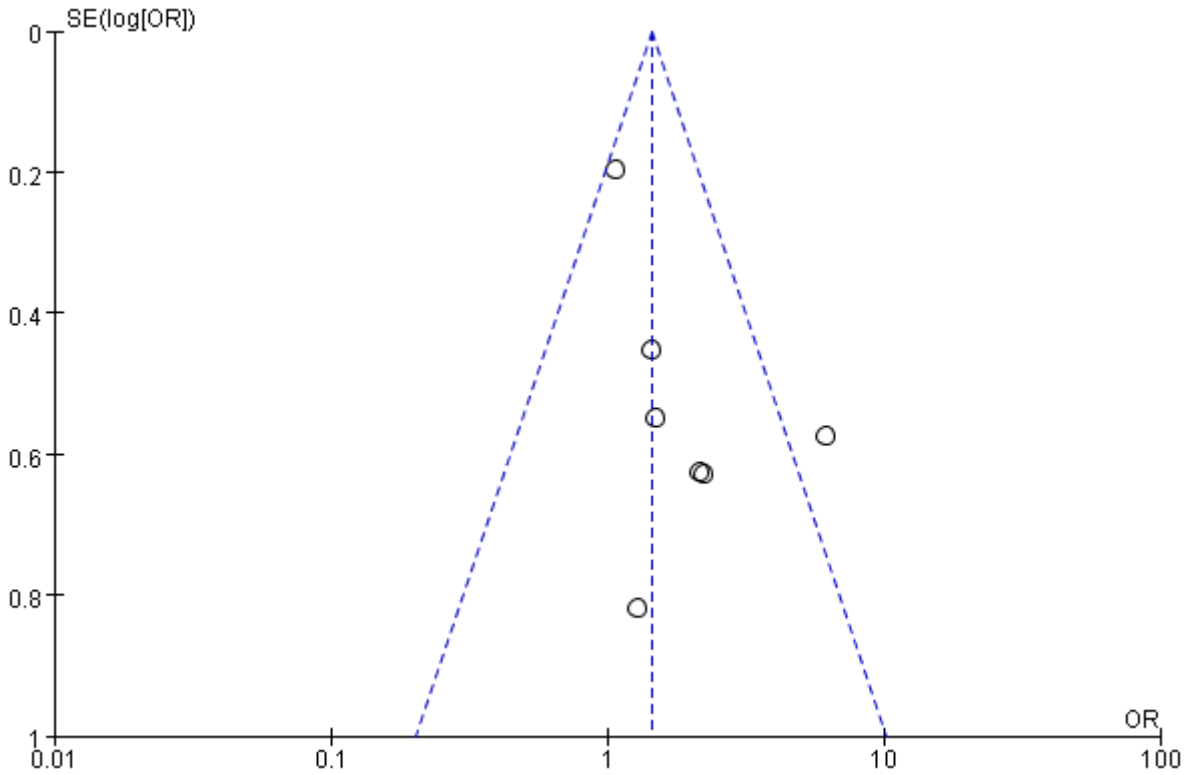


Figure 6. Forest plot of age at 12 weeks

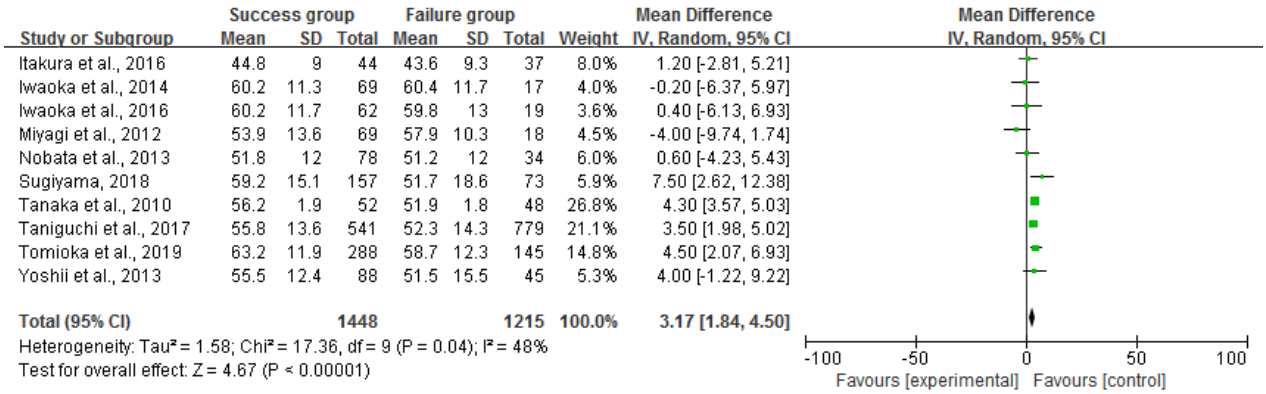


Figure 7. Funnel plot of age at 12 weeks

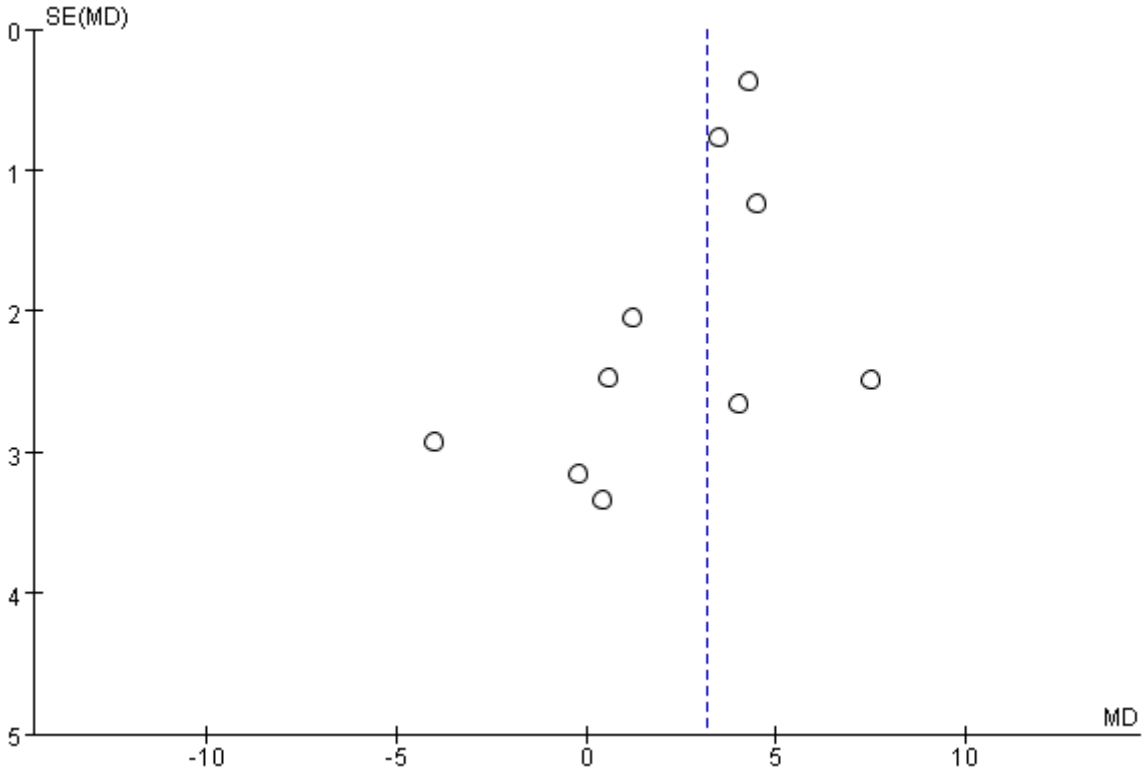


Figure 8. Forest plot of age at 12 weeks (≧50 years)

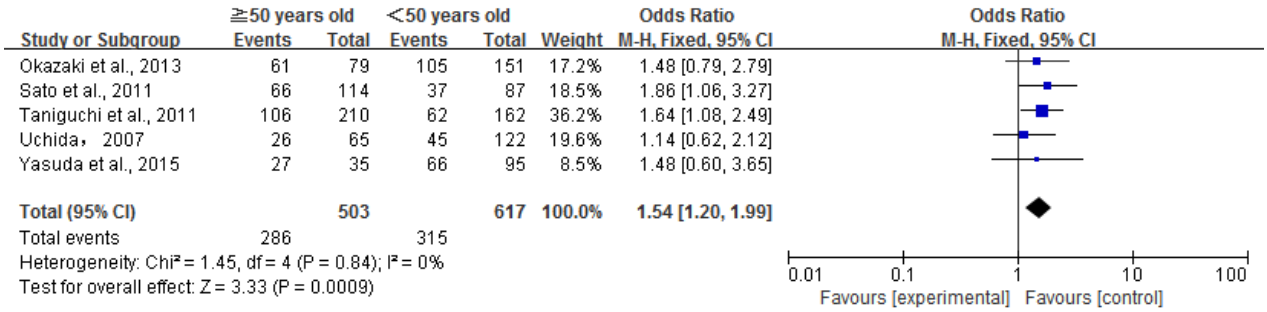


Figure 9. Funnel plot of age at 12 weeks (≧50 years)

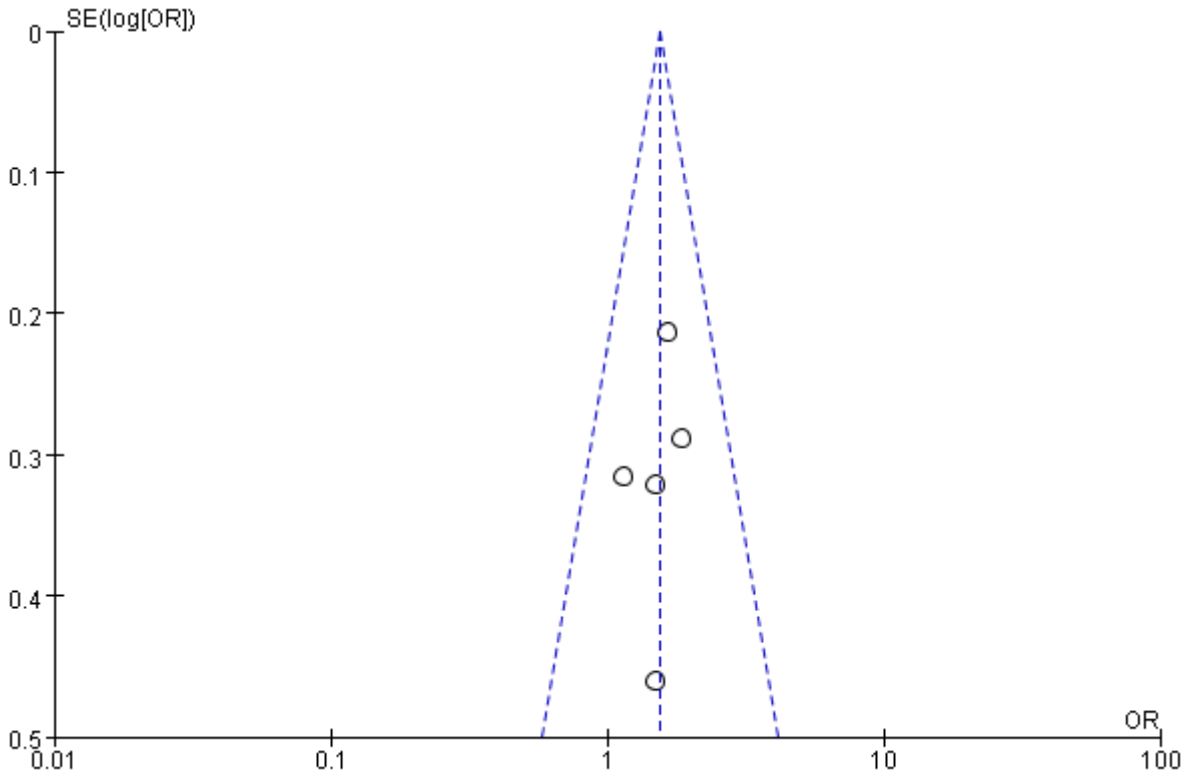


Figure 10. Forest plot of smoking cessation drug at 12 weeks

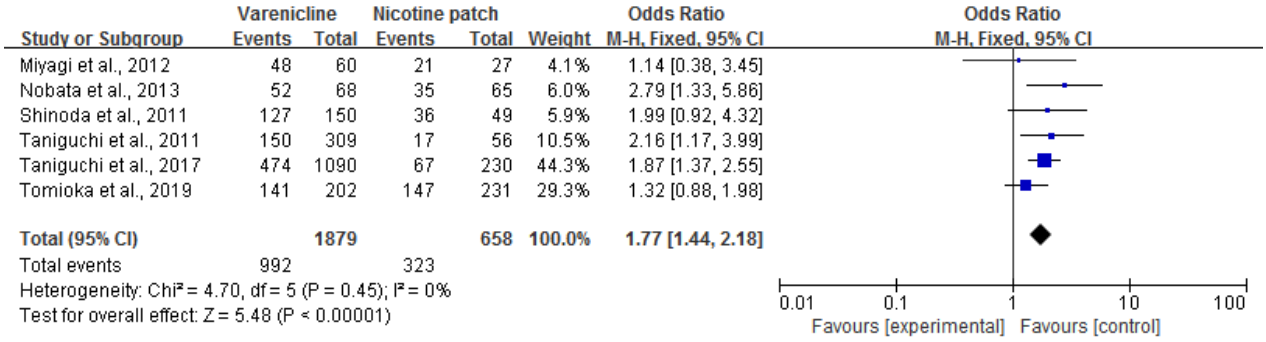


Figure 11. Funnel plot of smoking cessation drug at 12 weeks

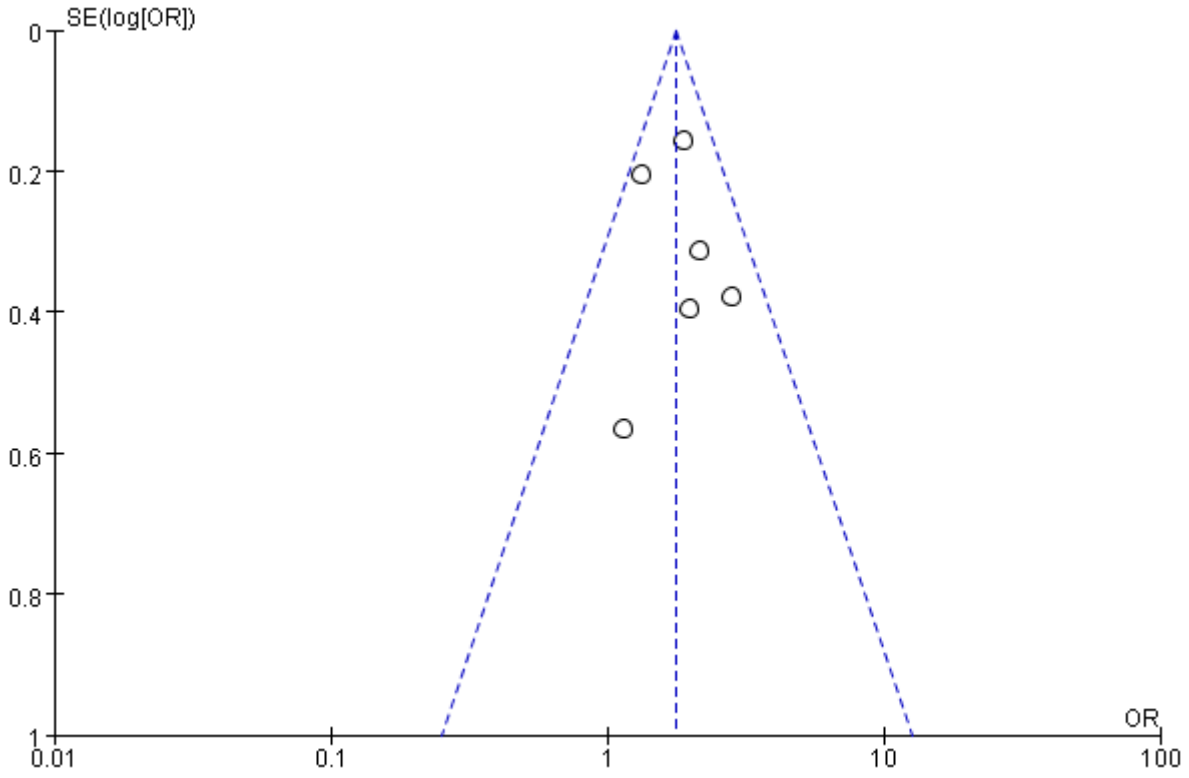


Figure 12. Forest plot of the completion of SCT program at 12 weeks

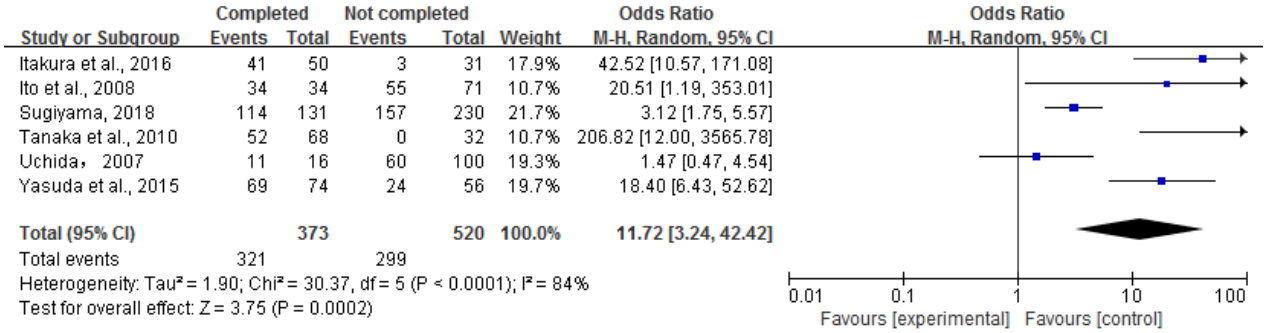


Figure 13. Funnel plot of the completion of SCT program at 12 weeks

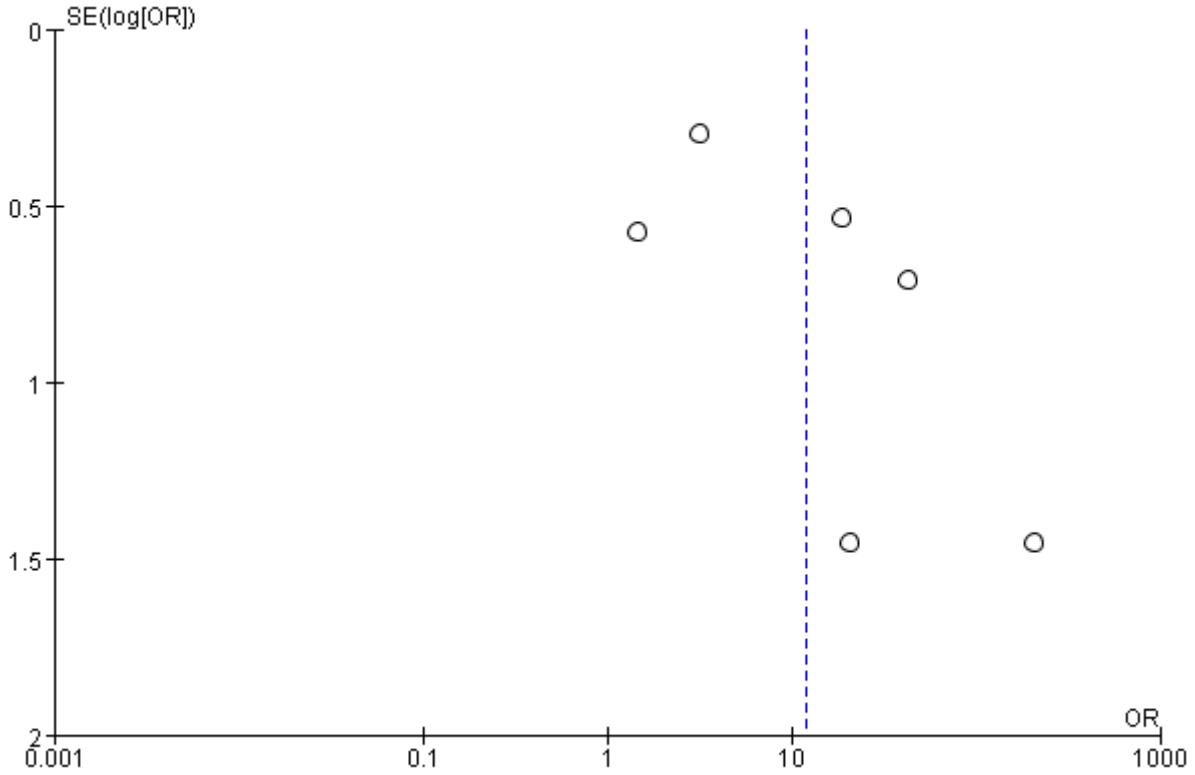


Figure 14. Forest plot of Brinkman index at 12 weeks

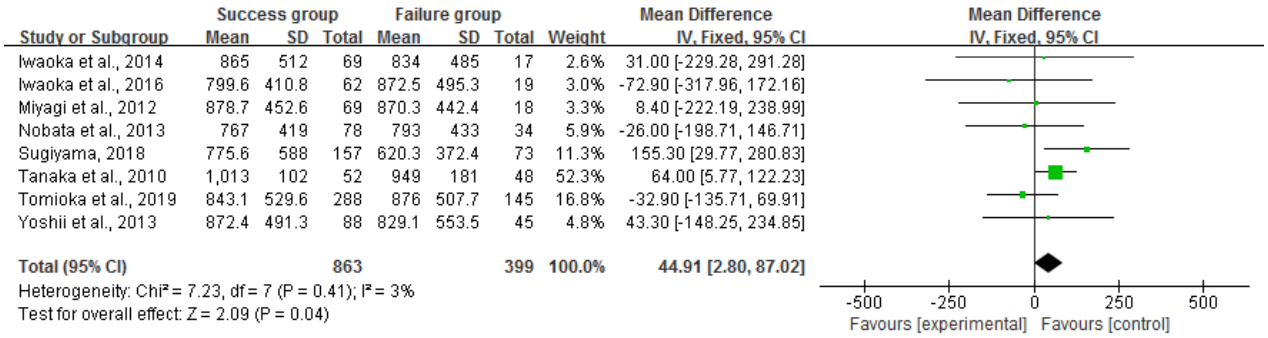


Figure 15. Funnel plot of Brinkman index at 12 weeks

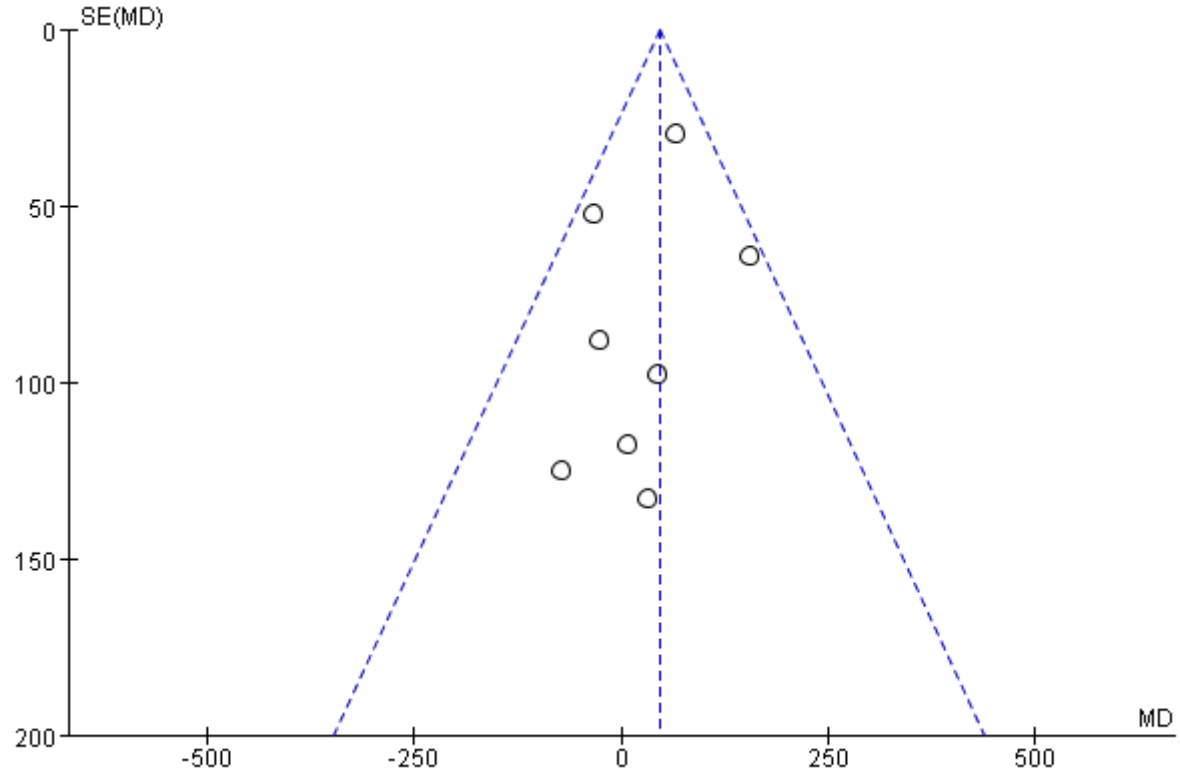


Figure 16. Forest plot of Nicotine dependence (TDS) at 12 weeks

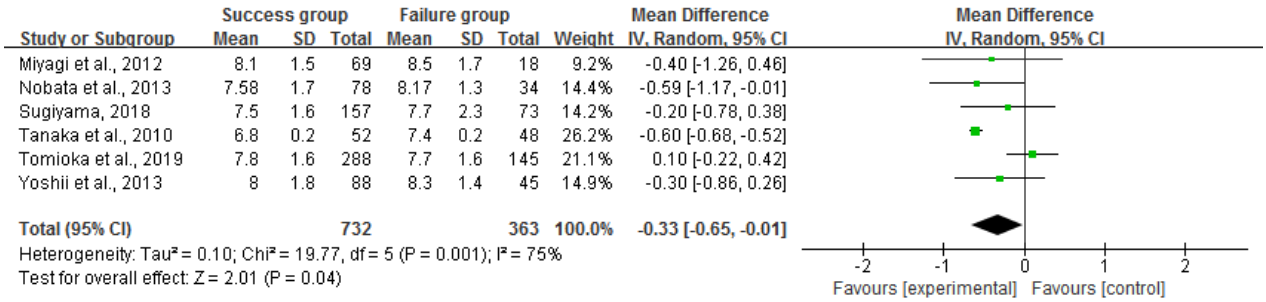


Figure 17. Funnel plot of Nicotine dependence (TDS) at 12 weeks

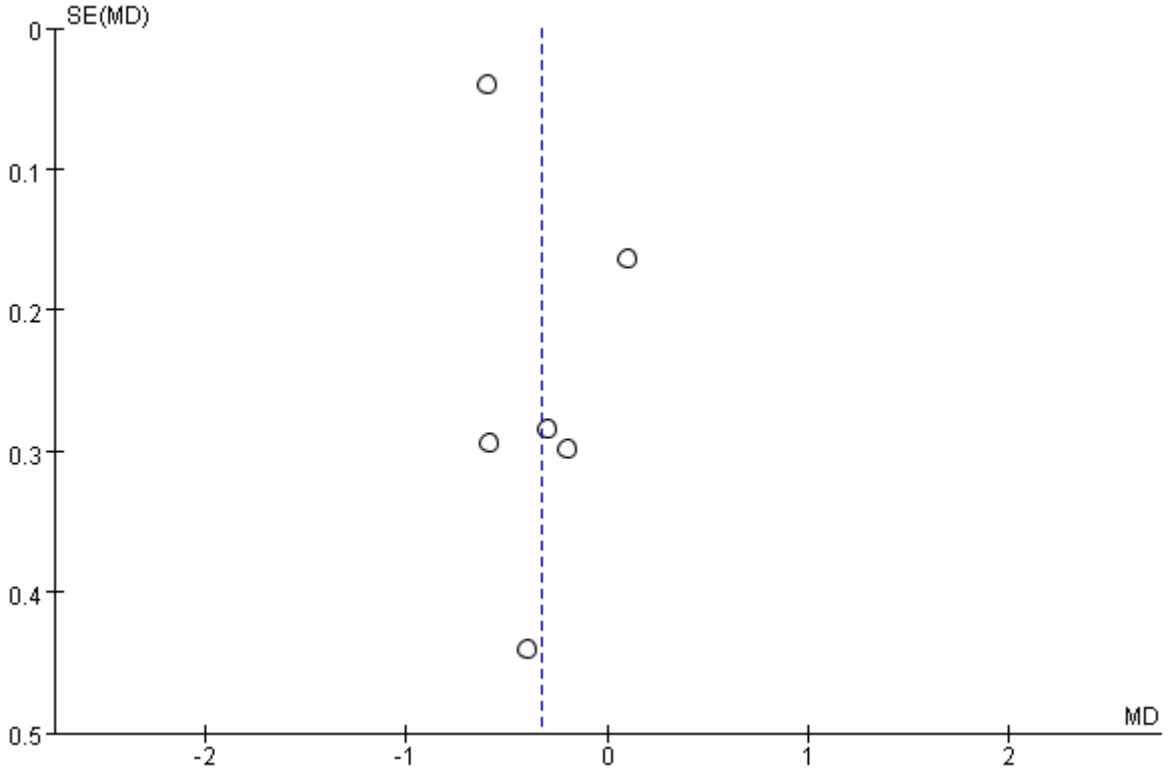


Figure 18. Forest plot of the number of cigarettes smoking per day at 12 weeks

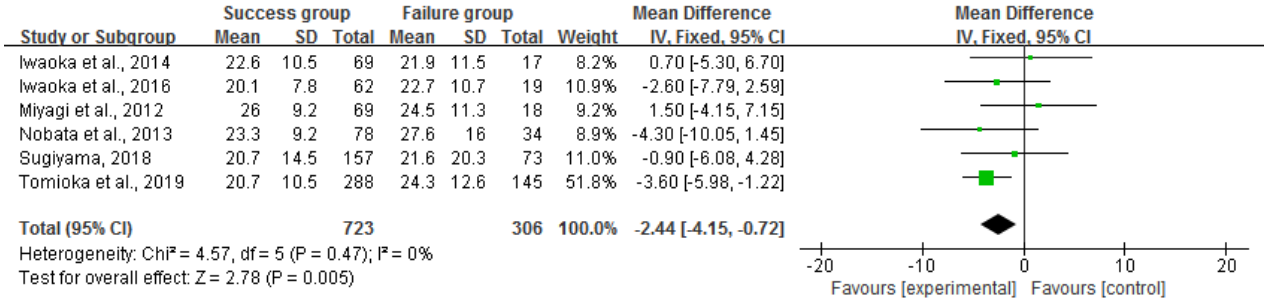


Figure 19. Funnel plot of the number of cigarettes smoking per day at 12 weeks

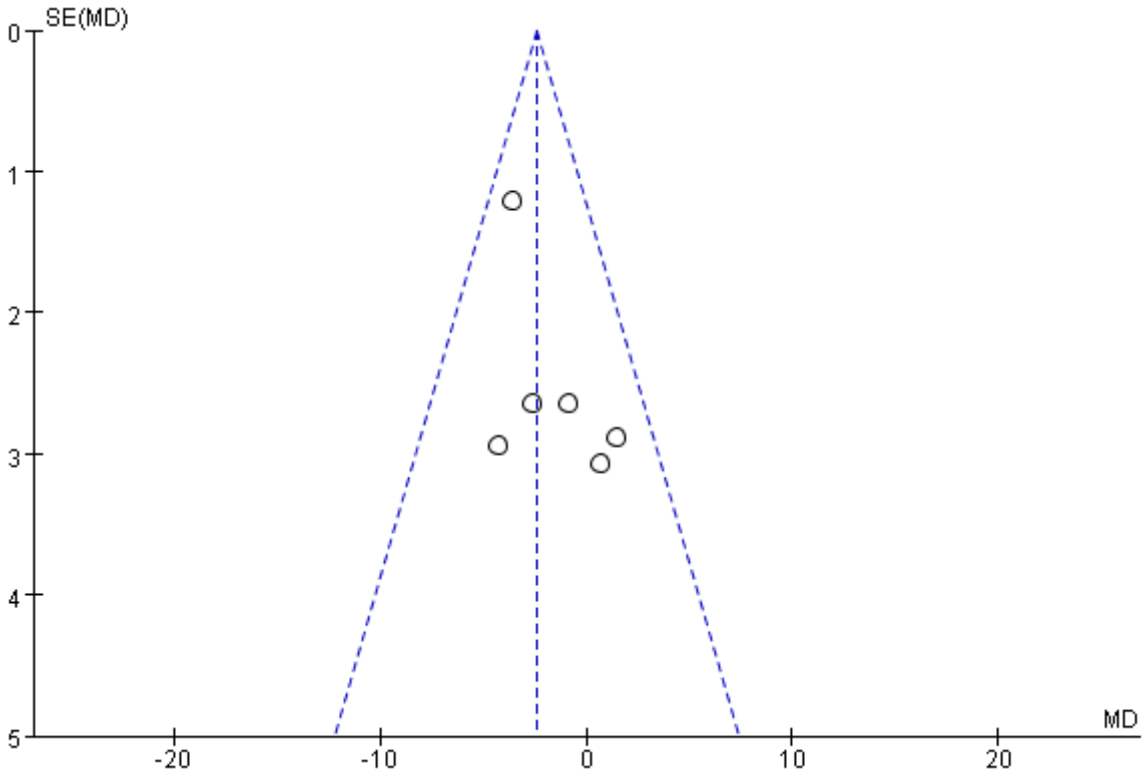


Figure 20. Forest plot of the number of smoking years at 12 weeks

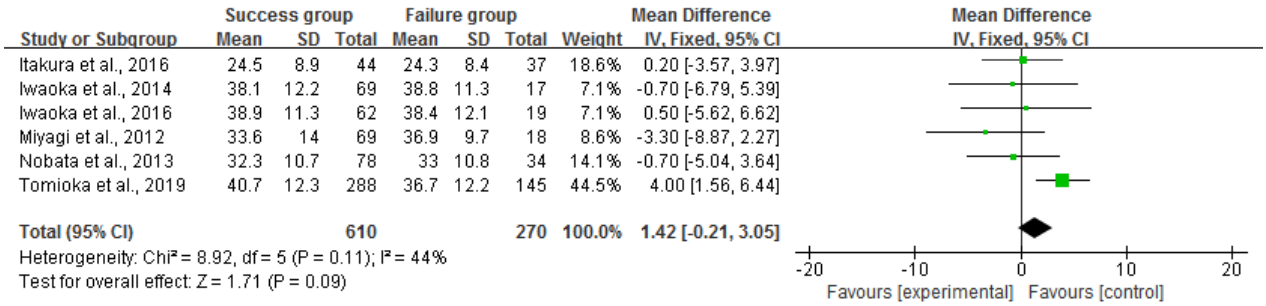


Figure 21. Funnel plot of the number of smoking years at 12 weeks

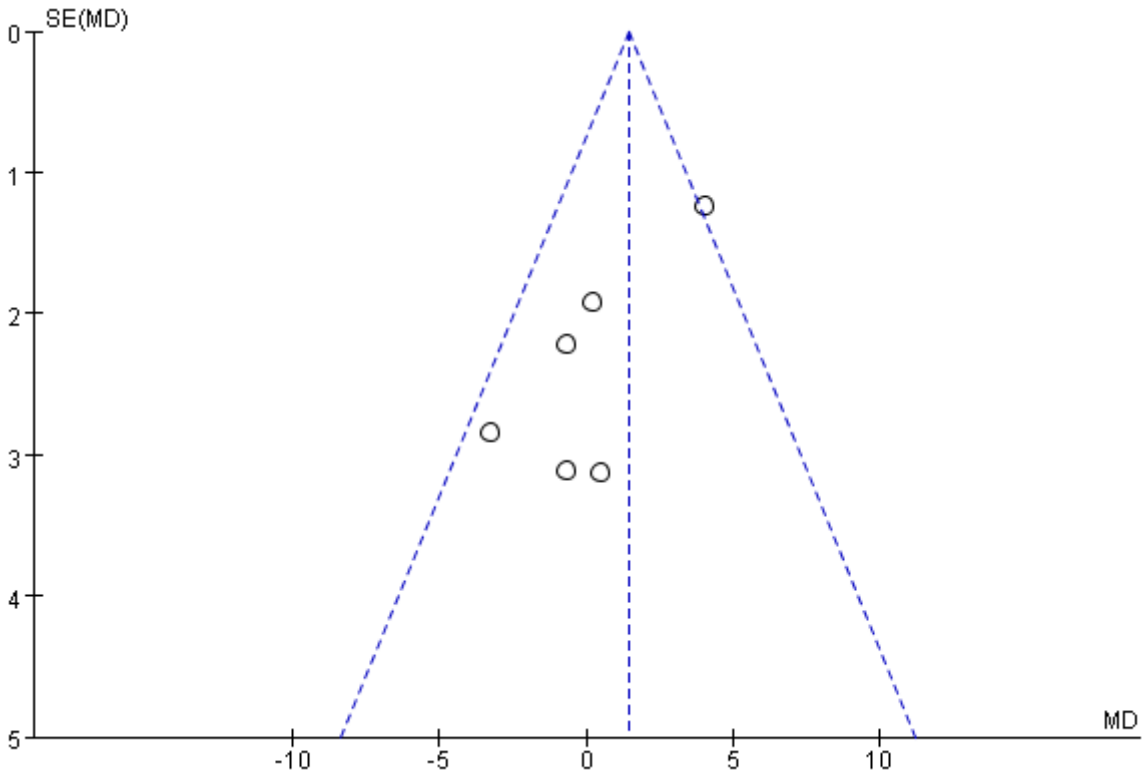


Figure 22. Forest plot of previous abstinence at 12 weeks

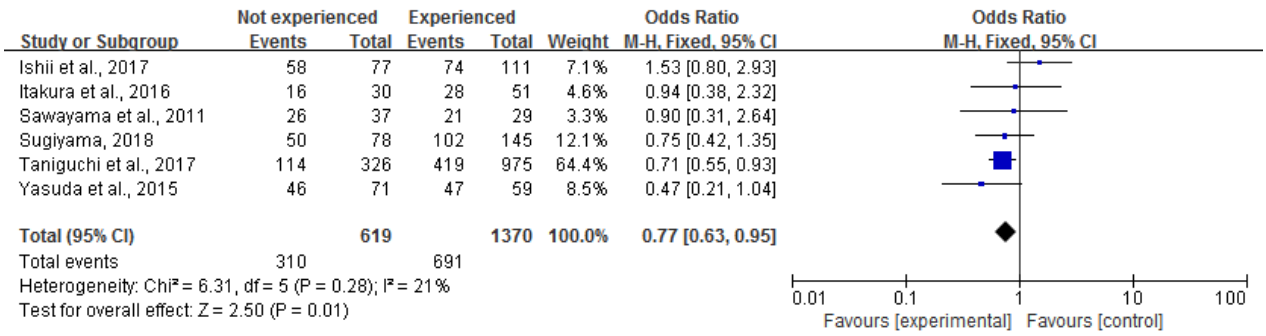


Figure 23. Funnel plot of previous abstinence at 12 weeks

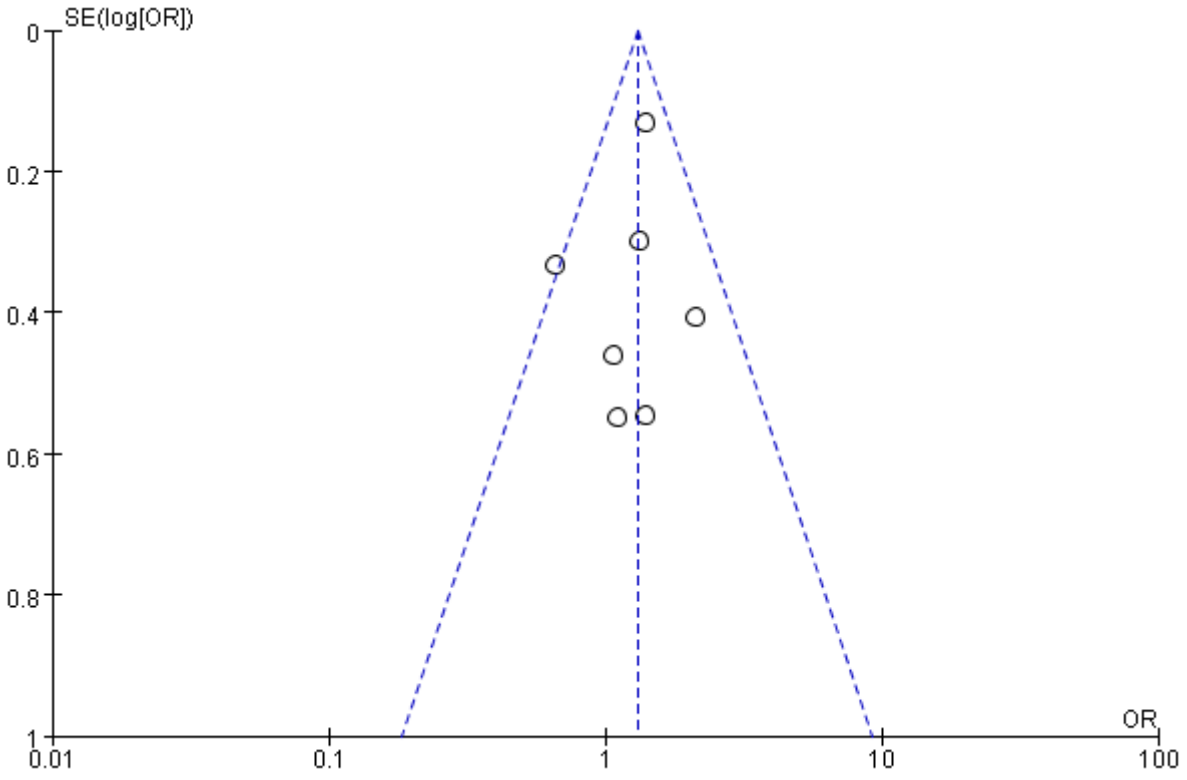


Figure 24. Forest plot of having present diseases at 12 weeks

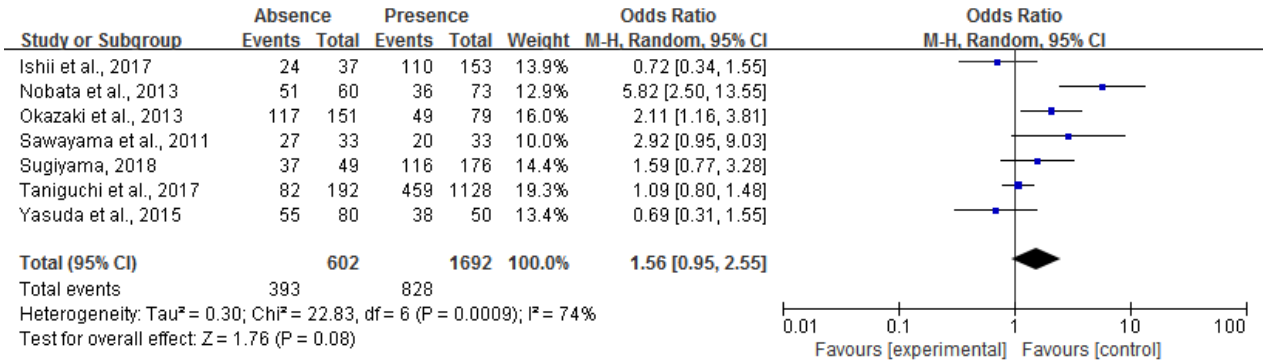


Figure 25. Funnel plot of having present diseases at 12 weeks

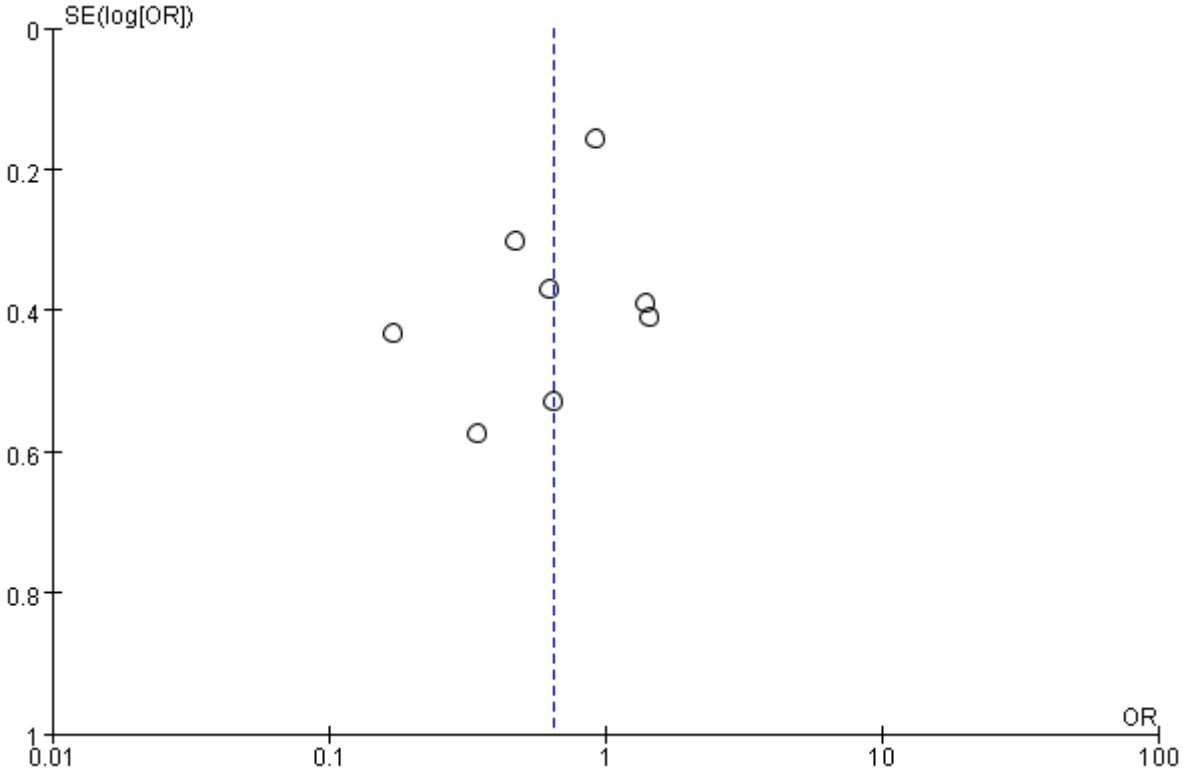


Figure 26. Forest plot of having mental diseases at 12 weeks

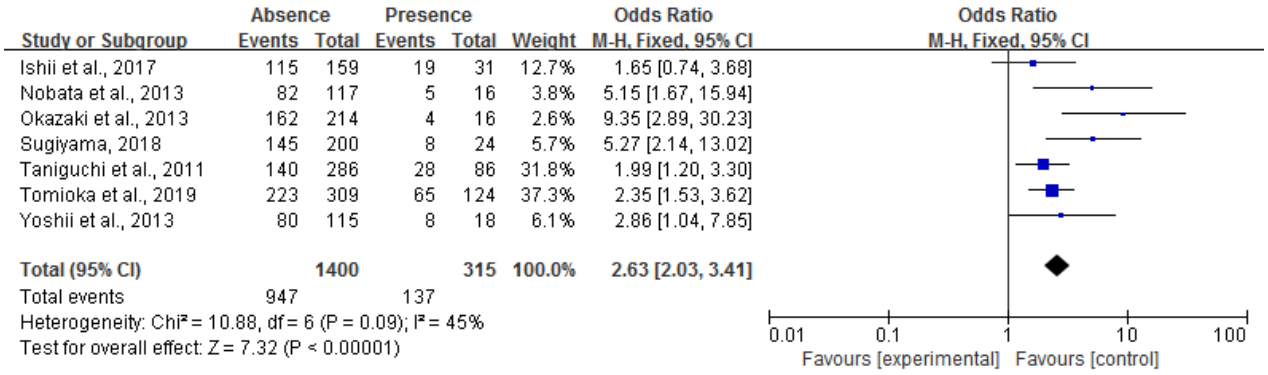


Figure 27. Funnel plot of having mental diseases at 12 weeks

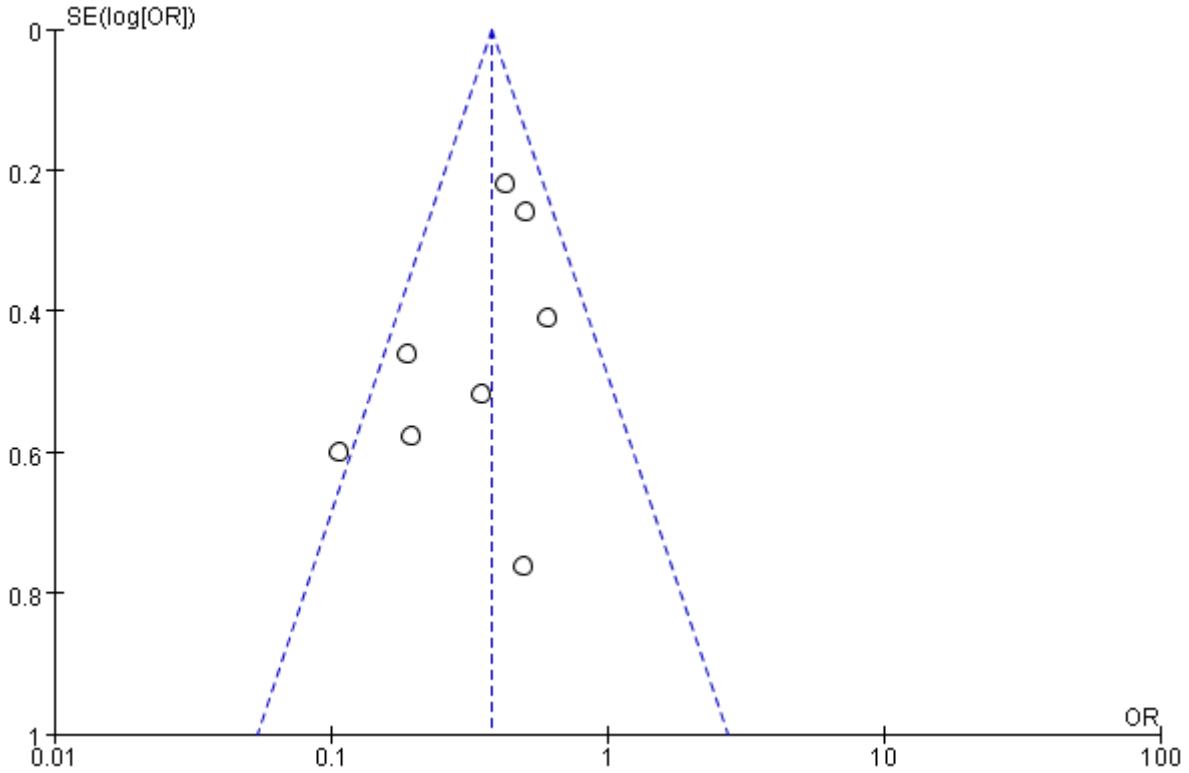


Figure 28. Forest plot of having respiratory diseases at 12 weeks

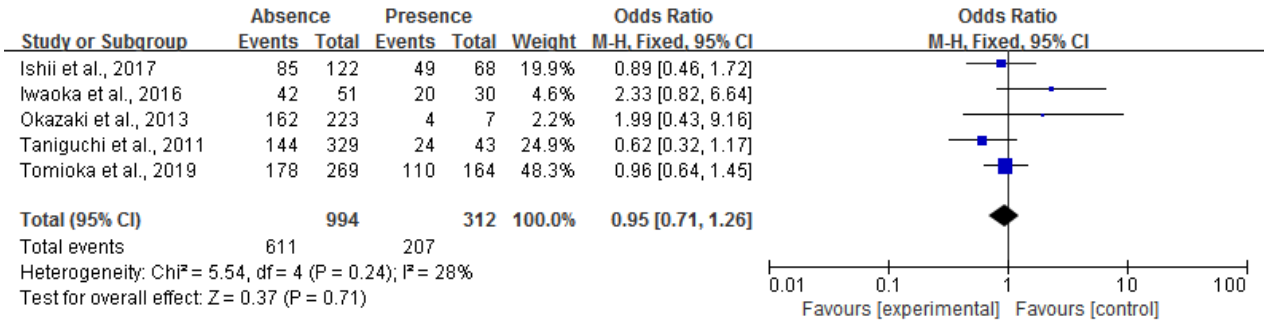


Figure 29. Funnel plot of having respiratory diseases at 12 weeks

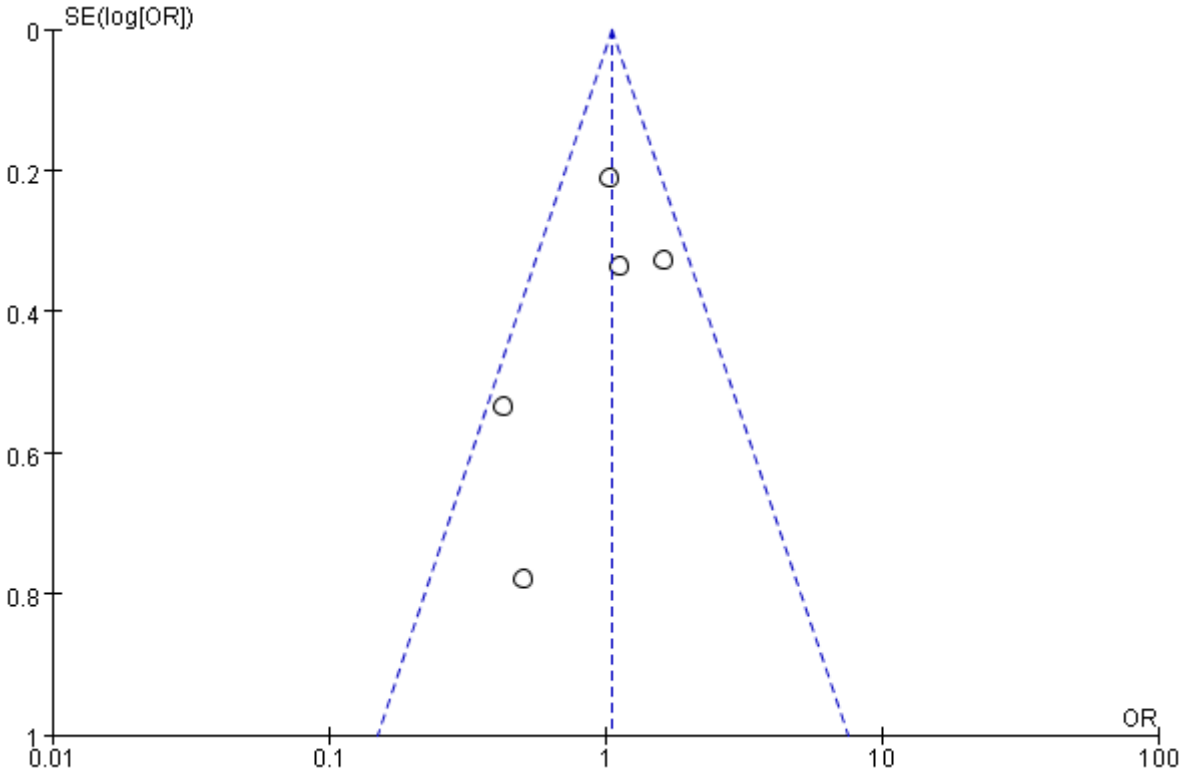


Figure 30. Forest plot of having diabetes at 12 weeks

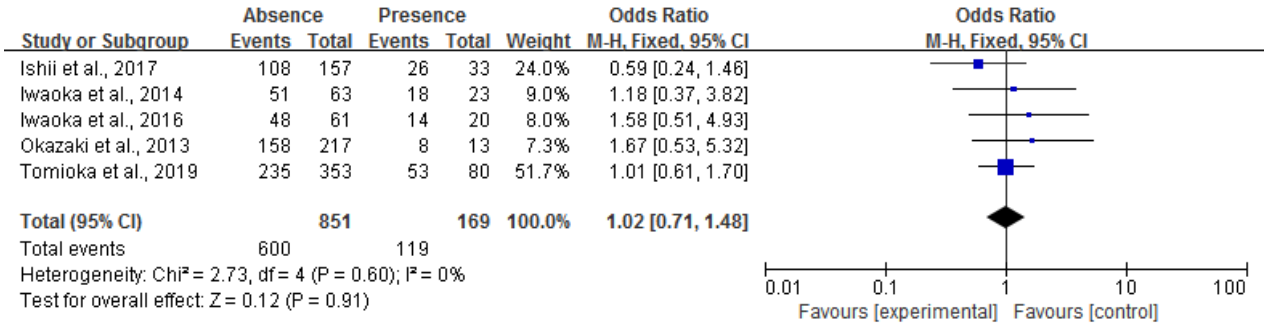


Figure 31. Funnel plot of having diabetes at 12 weeks

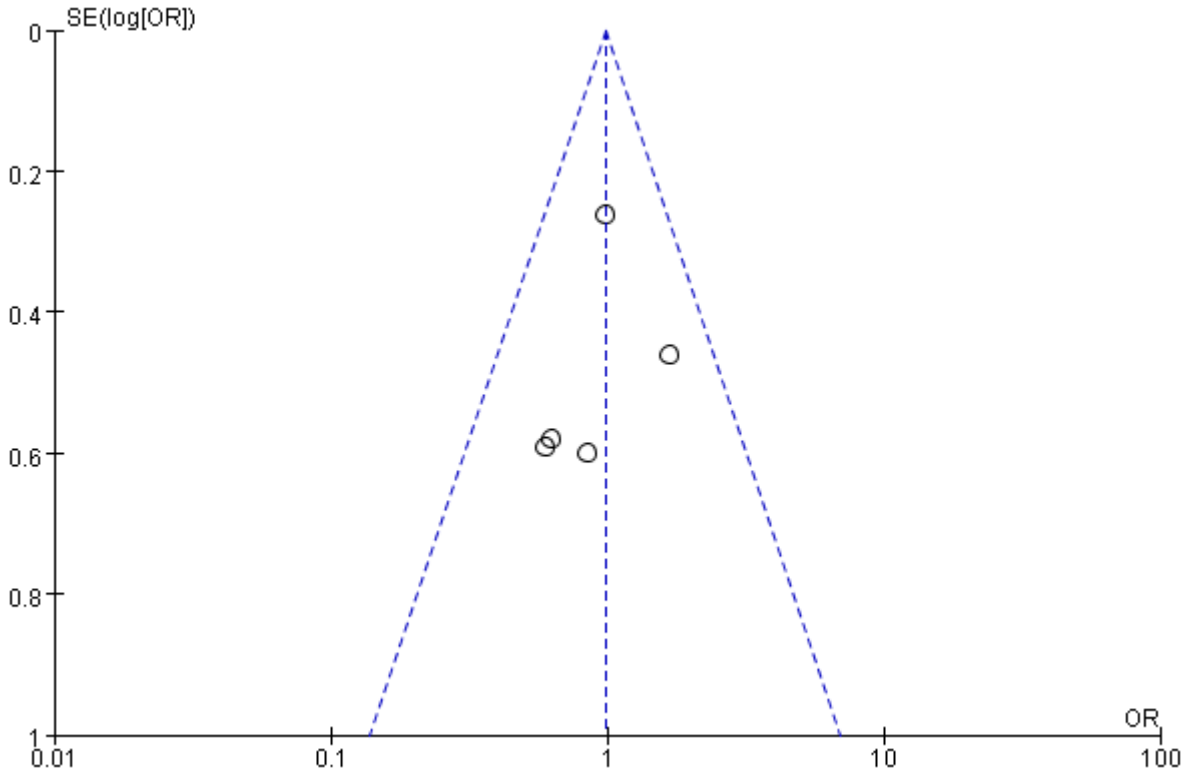


Figure 32. Forest plot of having hypertension at 12 weeks

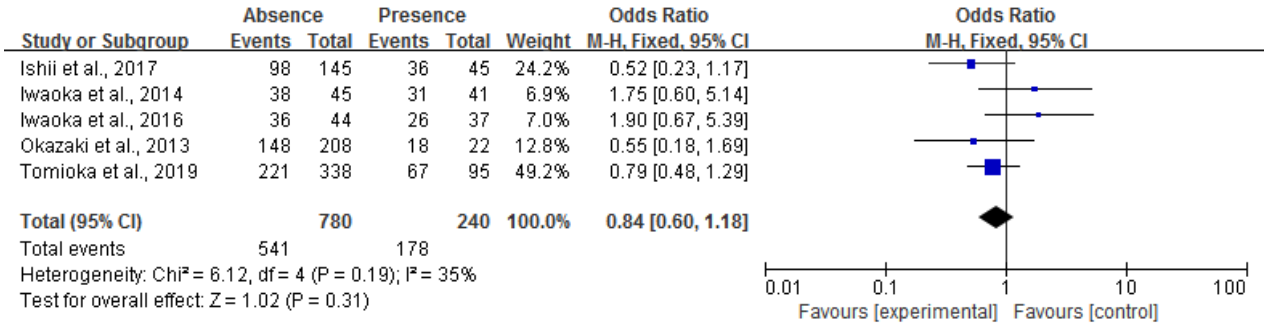


Figure 33. Forest plot of having hypertension at 12 weeks

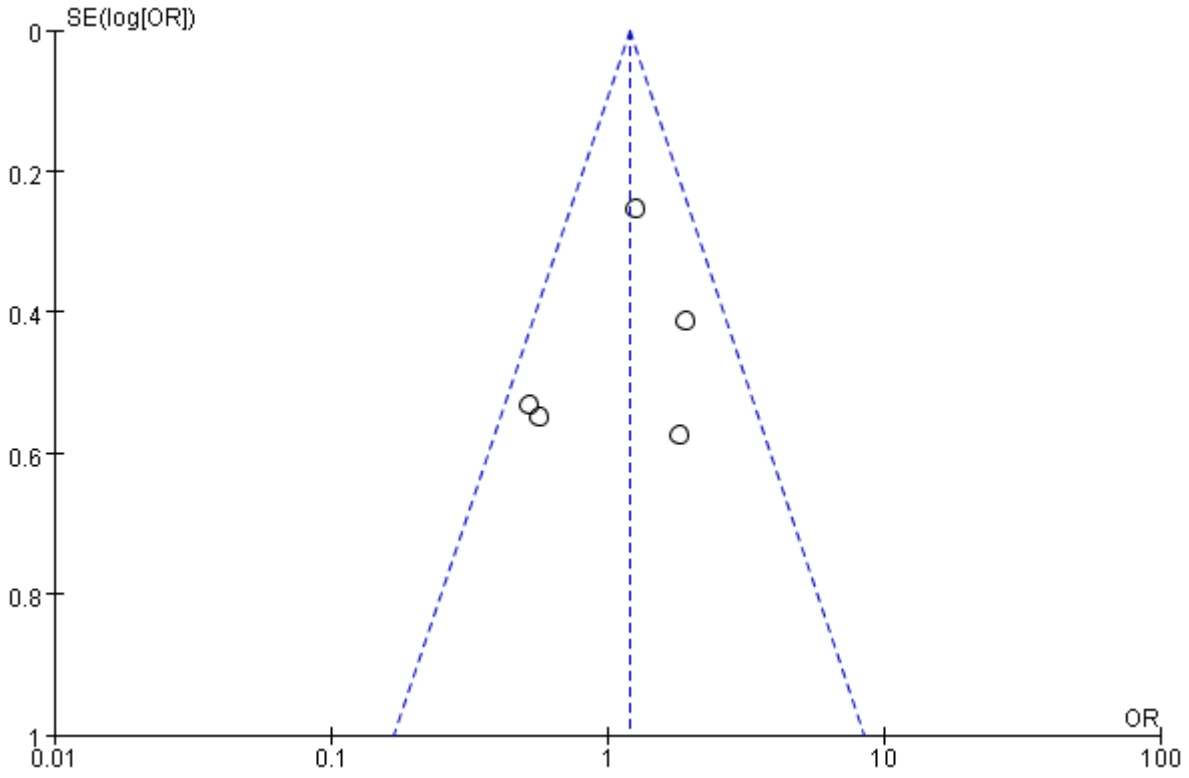


Figure 34. Forest plot of the CO concentration of the breath at the start of treatment at 12 weeks

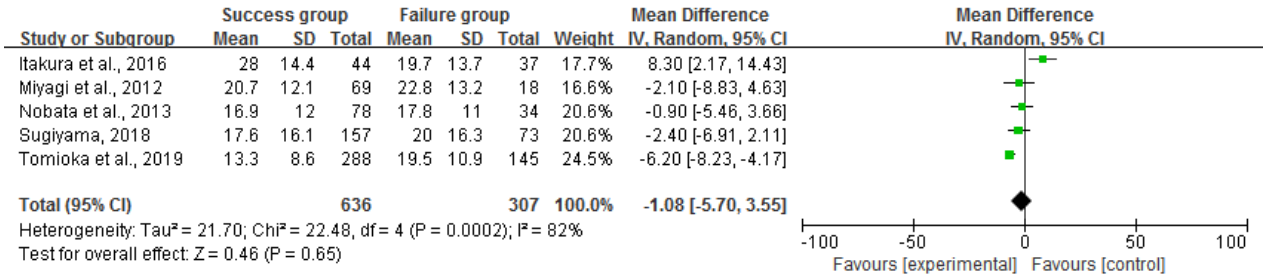


Figure 35. Funnel plot of the CO concentration of the breath at the start of treatment at 12 weeks

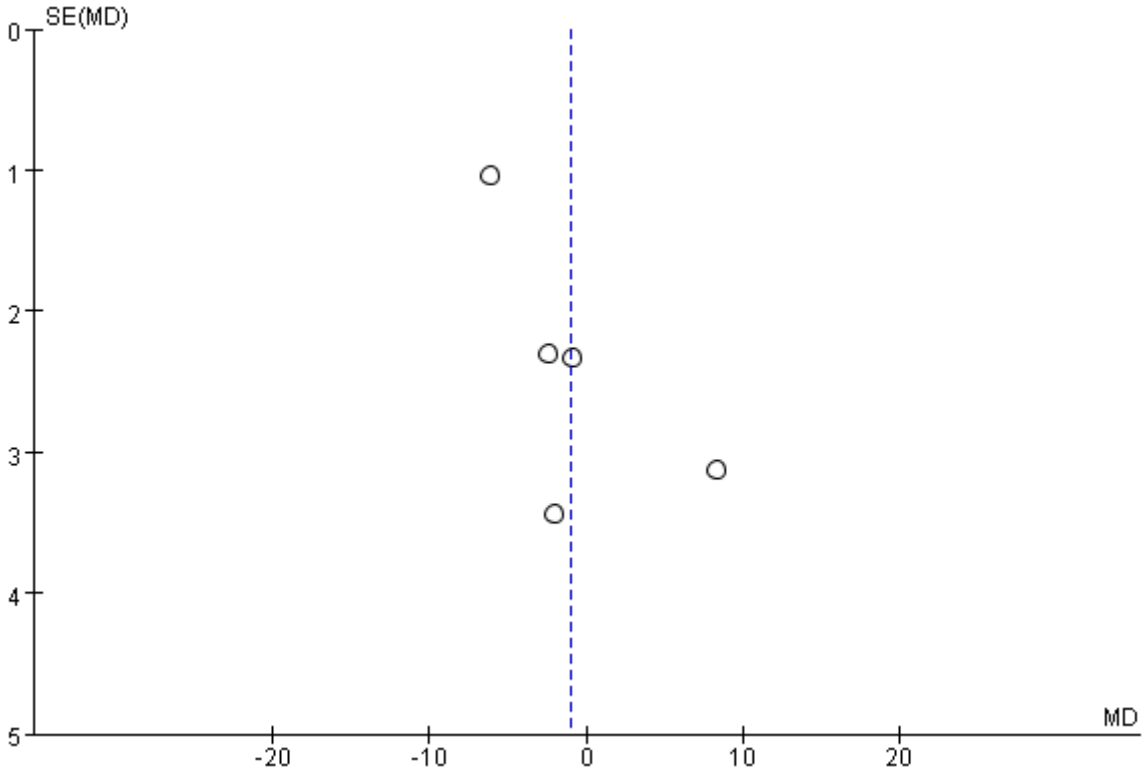


Figure 36. Forest plot of cohabitant with smokers at 12 weeks

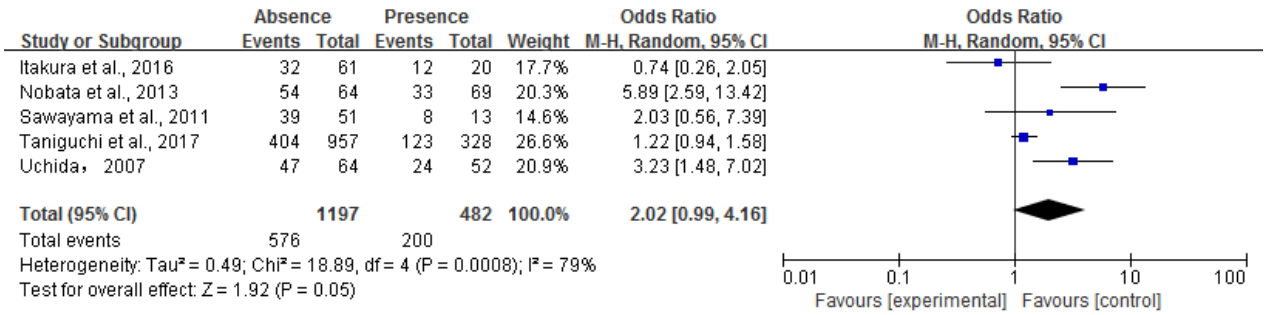


Figure 37. Forest plot of cohabitant with smokers

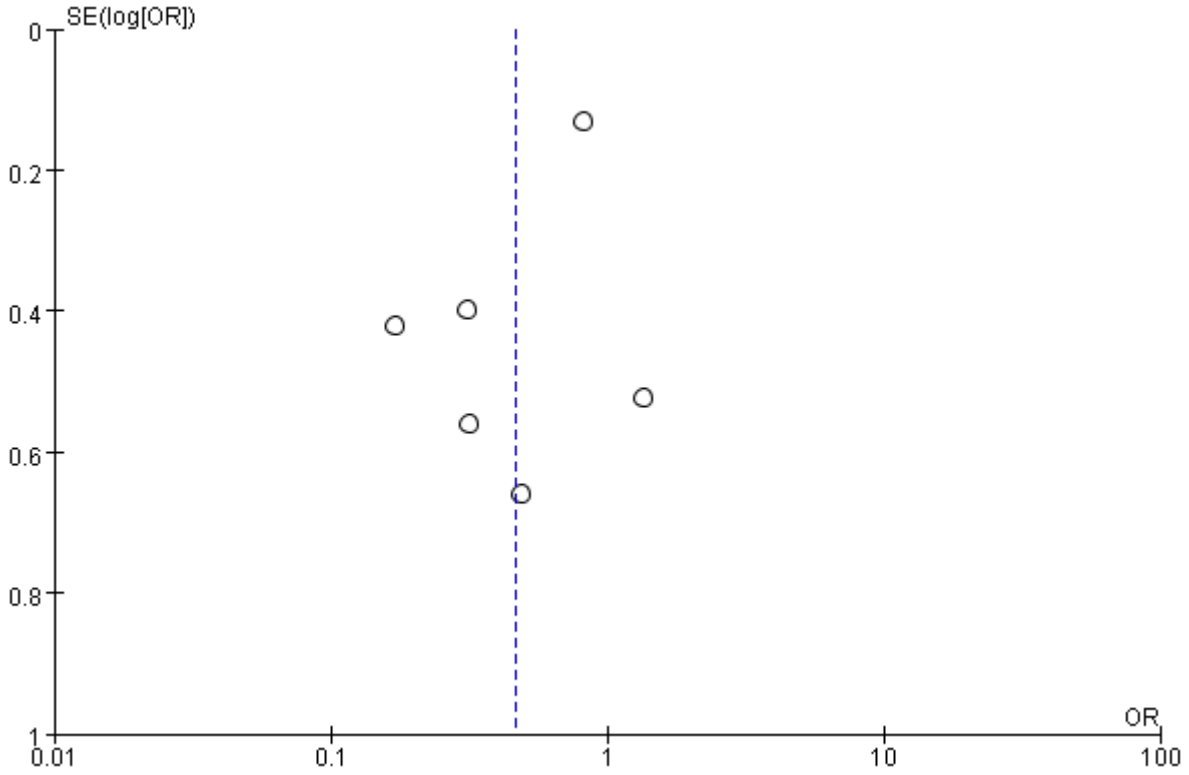


Figure 38. Forest plot of previous abstinence at 1 year

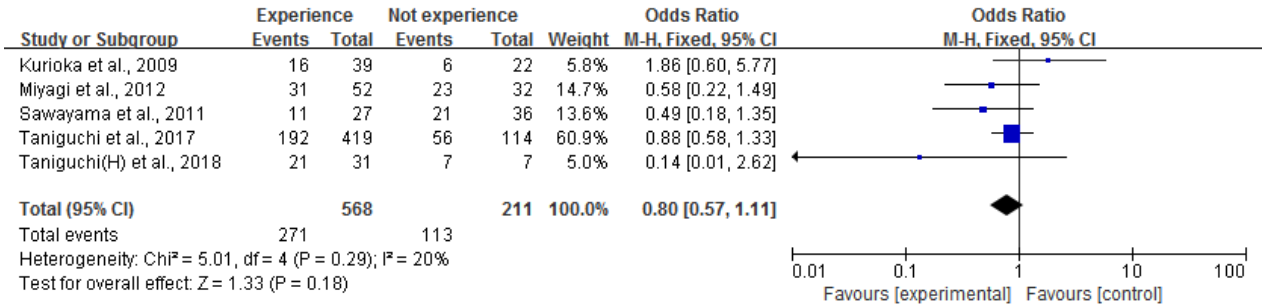
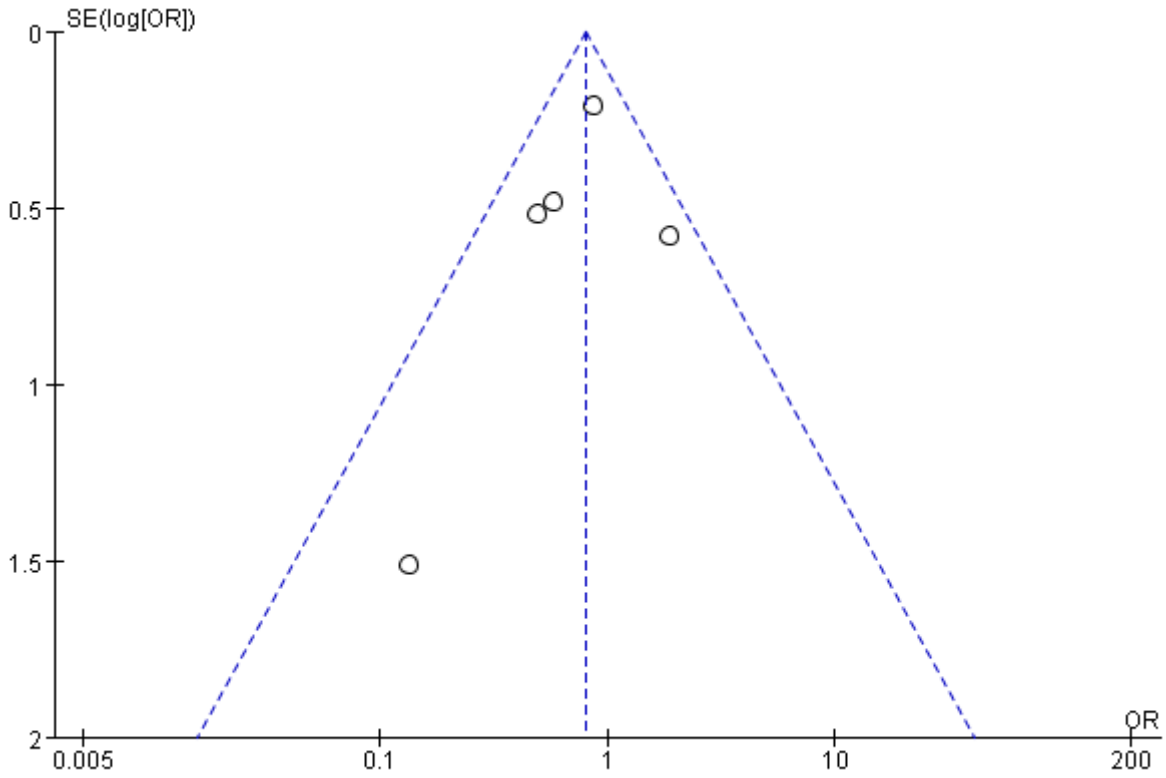


Figure 39. Funnel plot of previous abstinence



Meta-analysis

To assess the effect of gender differences on smoking cessation among the studies included in systematic review, we conducted meta-analysis to evaluate the effect of gender differences on smoking cessation. For meta-analysis, the results of meta-analysis are reported as odds ratio (OR) with 95% confidence interval (CI). Chi-squared heterogeneity test (*p*-value) and Higgins index (I^2) are applied to evaluate the heterogeneity among included articles. Heterogeneity is regarded as: none (I^2 <25%), low (25%≤ I^2 <50%), moderate (25%≤ I^2 <75%), or high ($I^2 \geq$ 75%). The fixed effect model is applied when slight heterogeneity (*p*-value<0.05 or $I^2 \leq$ 50%), otherwise, the random effect model is used. In addition, we generated and visually analyzed funnel plots for testimonies of publication bias. All analyses are conducted by the software RevMan (Review Manager, version 5.3).

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