

Figure 1. a: Quality assessment of included studies based on the NHLBI Randomized Controlled Trials Studies Quality Assessment Tool.

Study	Risk of bias														Overall
	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	
Caponnetto et al., 2013	+	+	+	+	+	X	X	+	+	X	+	+	+	+	+
Cravo et al., 2016	+	+	X	X	X	+	X	X	+	+	+	+	+	+	+
D'Ruiz et al., 2015	+	X	X	+	X	+	+	+	+	+	+	X	+	+	+
Hajek et al., 2019	+	+	X	+	+	+	+	X	+	+	+	+	+	+	+
Lee et al., 2018	+	+	+	+	X	+	+	+	X	+	+	+	+	+	+
Walele et al., 2018	X	+	X	X	X	X	+	+	+	+	+	+	+	+	-
Walele et al., 2016	+	X	X	X	X	+	X	+	+	+	+	+	+	+	+
Tattan-Birch et al., 2023	+	+	+	X	+	+	X	X	+	+	+	+	+	+	+

D1: Was the study described as randomized, a randomized trial, a randomized clinical trial, or an RCT?
 D2: Were eligibility/selection criteria for the study population prespecified and clearly described?
 D3: Were the participants in the study representative of those who would be eligible for the test/service/intervention in the general or clinical population of interest?
 D4: Were all eligible participants that met the prespecified entry criteria enrolled?
 D5: Was the sample size sufficiently large to provide confidence in the findings?
 D6: Was the test/service/intervention clearly described and delivered consistently across the study population?
 D7: Were the outcome measures prespecified, clearly defined, valid, reliable, and assessed consistently across all study participants?
 D8: Were the people assessing the outcomes blinded to the participants' exposures/interventions?
 D9: Was the loss to follow-up after baseline 20% or less? Were those lost to follow-up accounted for in the analysis?
 D10: Did the statistical methods examine changes in outcome measures from before to after the intervention? Were statistical tests done that provided p values for the pre-to-post changes?
 D11: Were outcome measures of interest taken multiple times before the intervention and multiple times after the intervention (i.e., did they use an interrupted time-series design)?
 D12: If the intervention was conducted at a group level (e.g., a whole hospital, a community, etc.) did the statistical analysis take into account the use of individual-level data to determine effects at the group level?
 D13: Were outcomes reported or subgroups analyzed prespecified (i.e., identified before analyses were conducted)?
 D14: Were all randomized participants analyzed in the group to which they were originally assigned, i.e., did they use an intention-to-treat analysis?

Judgement
 High (Red circle)
 Unclear (Yellow circle)
 Low (Green circle)
 Not applicable (Grey circle)

Figure 1.b: Quality assessment of included studies based on the NHLBI Observational Cohort/ Cross-Sectional Studies Quality Assessment Tool.

Study	Risk of bias														Overall
	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	
Cassidy et al., 2020	+	+	+	+	×	+	×	+	+	+	+	○	○	+	
Culbreth et al., 2021	+	+	+	+	○	+	+	×	+	×	+	×	○	○	+
Dawkins et al., 2013	+	+	+	+	×	○	+	+	+	○	+	○	○	○	+
Diamantopoulou et al., 2019	+	+	○	+	○	+	+	+	+	×	+	○	○	○	+
Etter, 2010	+	+	+	+	+	+	+	+	+	+	+	+	○	○	+
Farsalinos et al., 2013	+	+	+	+	+	+	+	+	+	+	+	+	○	+	+
Farsalinos et al., 2014	+	+	○	×	×	○	×	+	+	+	+	×	○	+	+
Habib et al., 2020	+	+	○	○	×	×	×	+	+	×	+	○	○	○	-
M. Jackson et al., 2020	+	+	○	○	+	+	×	○	+	×	+	○	○	○	+
King et al., 2019	+	+	+	+	+	+	+	+	+	+	+	+	○	+	+
W. K. Lee et al., 2021	+	+	○	+	×	+	+	○	+	×	+	+	○	+	+
Lestari et al., 2018	+	+	○	+	×	+	+	+	×	+	×	○	○	○	+
D. Li & Xie, 2020	+	+	○	○	○	×	+	+	+	○	+	○	○	○	-
Puteh et al., 2018	+	+	+	+	+	○	○	+	×	○	×	○	○	○	+
Schneller et al., 2020	+	+	+	+	+	○	×	×	+	×	+	○	○	○	-
Skucha et al., 2017	+	+	○	+	×	+	+	×	+	×	+	×	○	+	+
J. B. Wang et al., 2018	+	+	+	+	+	+	+	+	+	+	+	+	○	+	+
Xie & Li, 2020	+	+	○	+	×	○	×	+	+	×	+	+	○	○	+
Yao et al., 2017	+	+	+	+	+	+	+	+	+	+	+	+	○	+	+
Soule et al., 2020	+	+	○	+	×	+	×	+	+	+	+	○	○	×	+
Soule et al., 2015	+	+	+	+	+	+	+	+	+	+	+	×	+	+	+
Chatham-Stephens et al., 2016	×	+	○	+	○	○	+	+	+	×	+	○	○	+	+
Q. Li et al., 2016	+	×	+	×	+	×	○	×	×	○	+	○	○	×	×
Dai & Khan, 2020	+	+	+	×	×	+	+	+	+	×	+	○	+	+	+
D. Li et al., 2020	+	+	○	+	×	+	+	+	+	+	+	○	○	+	+
Mohamed et al., 2018	+	+	○	+	○	○	+	+	+	+	+	○	+	+	+
Polosa, Caponnetto, et al., 2014	+	+	○	+	+	+	+	+	+	+	+	○	○	+	+
Polosa et al., 2011	+	+	○	+	×	○	○	○	+	×	+	○	○	+	-
Polosa, Morjaria, et al., 2014	+	+	○	+	×	○	+	+	+	+	+	○	○	+	+
Pratt et al., 2016	+	+	○	+	×	○	○	+	+	+	+	○	○	+	-
Rahman et al., 2016	+	+	○	+	○	○	+	+	+	+	+	○	○	+	+
Berlowitz et al., 2023	+	+	+	+	○	+	+	×	+	+	+	○	○	○	+
Chaiton et al., 2023	+	+	+	+	×	×	+	+	+	×	+	○	○	+	+

D1: Was the research question or objective in this paper clearly stated?
D2: Was the study population clearly specified and defined?
D3: Was the participation rate of eligible persons at least 50%?
D4: Were all subjects recruited from same populations? Were inclusion and exclusion criteria prespecified and applied uniformly to all participants?
D5: Was a sample size justification, power description, or variance and effect estimates provided?
D6: For the analyses in this paper, were the exposure(s) of interest measured prior to the outcome(s) being measured?
D7: Was the time frame sufficient so that one could reasonably expect to see an association between exposure and outcome if it existed?
D8: For exposures that can vary in amount or level, did the study examine different levels of the exposure as related to the outcome?
D9: Were the exposure measures clearly defined, valid, reliable, and implemented consistently across all study participants?
D10: Was the exposure(s) assessed more than once over time?
D11: Were the outcome measures clearly defined, valid, reliable, and implemented consistently across all study participants?
D12: Were the outcome assessors blinded to the exposure status of participants?
D13: Was loss to follow-up after baseline 20% or less?
D14: Were key potential confounding variables measured and adjusted statistically for their impact on the relationship between exposure(s) and outcome(s)?

Judgement
● High
● Unclear
+ Low
○ Not applicable

Figure 1.c: Quality assessment of included studies based on the NHLBI Experimental Studies Quality Assessment Tool.

Study	Risk of bias												Overall
	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	
Dicpinigaitis, 2016a	+	+	X	+	X	+	+	X		+	X	X	X
Dicpinigaitis, 2016b	+	+	X	+	X	+	+	X		+	X	X	X

D1: Was the study question or objective clearly stated?
 D2: Were eligibility/selection criteria for the study population prespecified and clearly described?
 D3: Were the participants in the study representative of those who would be eligible for the test/service/intervention in the general or clinical population of interest?
 D4: Were all eligible participants that met the prespecified entry criteria enrolled?
 D5: Was the sample size sufficiently large to provide confidence in the findings?
 D6: Was the test/service/intervention clearly described and delivered consistently across the study population?
 D7: Were the outcome measures prespecified, clearly defined, valid, reliable, and assessed consistently across all study participants?
 D8: Were the people assessing the outcomes blinded to the participants' exposures/interventions?
 D9: Was the loss to follow-up after baseline 20% or less? Were those lost to follow-up accounted for in the analysis?
 D10: Did the statistical methods examine changes in outcome measures from before to after the intervention? Were statistical tests done that provided p values for the pre-to-post changes?
 D11: Were outcome measures of interest taken multiple times before the intervention and multiple times after the intervention (i.e. did they use an interrupted time-series design)?
 D12: If the intervention was conducted at a group level (e.g., a whole hospital, a community, etc.) did the statistical analysis take into account the use of individual-level data to determine effects at the group level?

Judgement
 High (Red X)
 Low (Green +)
 Not applicable (Grey circle)

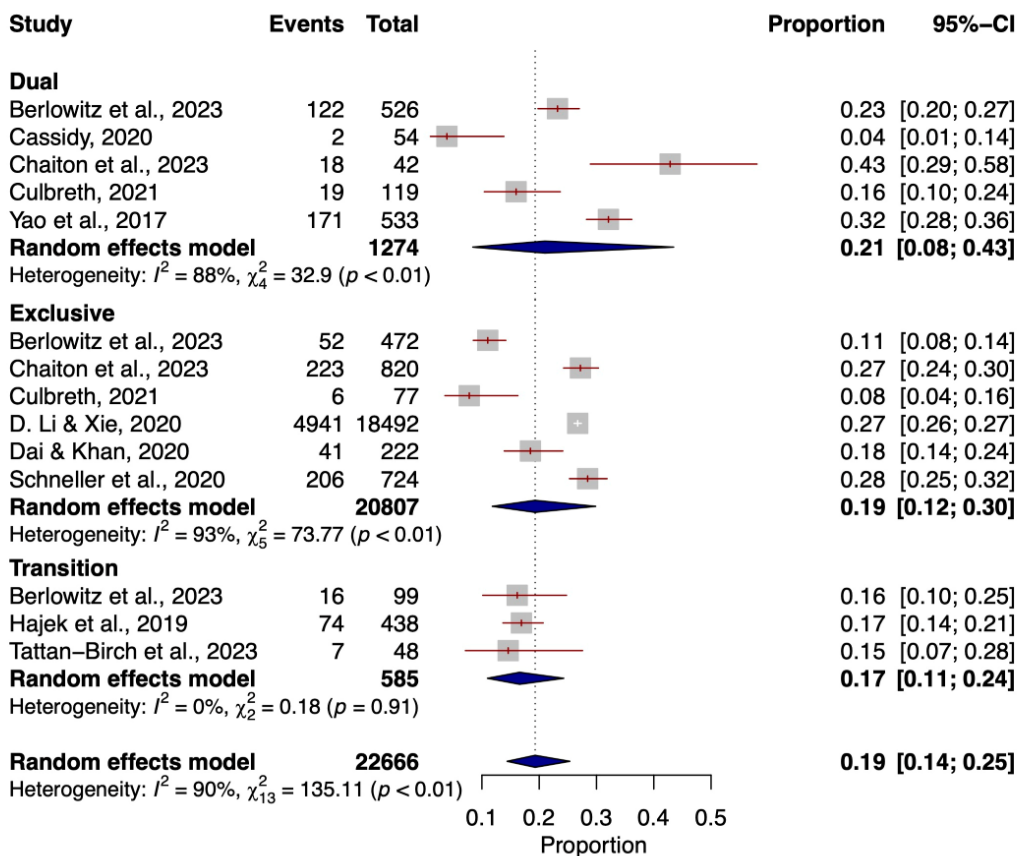


Figure 2: Forest plot of wheezing prevalence among dual, exclusive, and transitioning e-cigarette users. Legend: Forest plot depicting wheezing prevalence in distinct e-cigarette user categories. Each represented study features a line, with square markers indicating the calculated prevalence and the line width demonstrating the 95% CI. Diamond markers sum up the pooled prevalence for each user type.

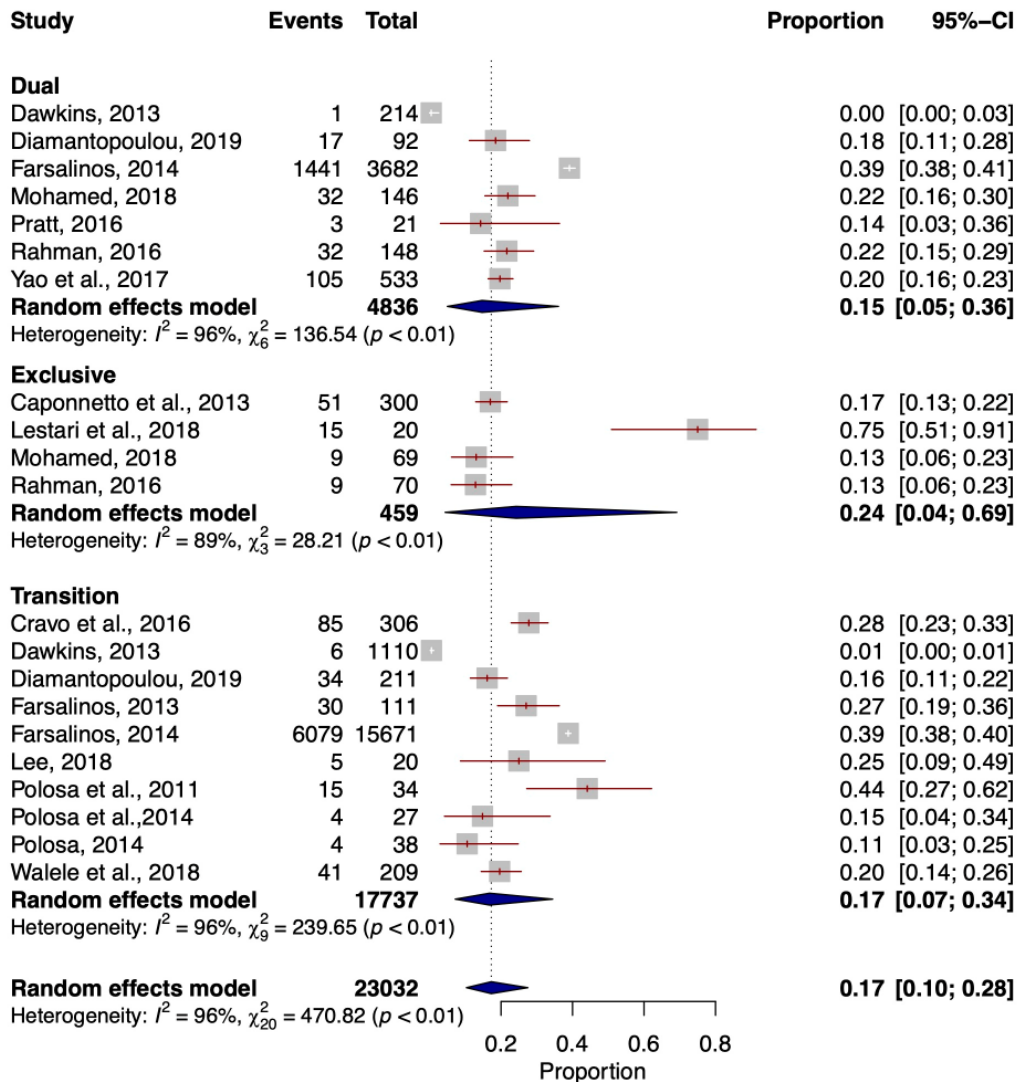


Figure 3: Forest plot of oropharyngeal symptom prevalence among dual, exclusive, and transitioning e-cigarette users. Legend: This forest plot delineates the prevalence of oropharyngeal symptoms across various e-cigarette user categories. Each study is denoted by a line, with square markers reflecting the reported prevalence and the line width displaying the 95% CI. Diamond markers aggregate the pooled prevalence for each user group.

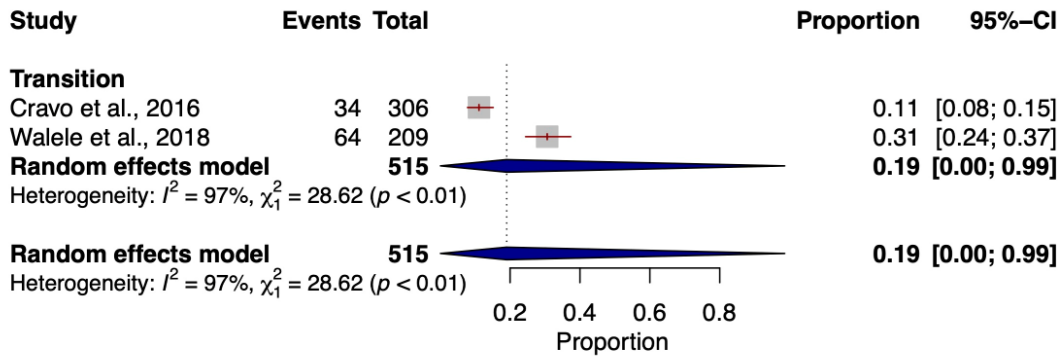


Figure 4: Forest plot of dry mouth symptom prevalence among dual, exclusive, and transitioning e-cigarette users. Legend: This forest plot highlights the prevalence of dry mouth symptoms in different e-cigarette user groups. Each study is represented by a line, with square markers showing the reported prevalence and the line width indicating the 95% CI. Diamond markers summarize the pooled prevalence for each user category.

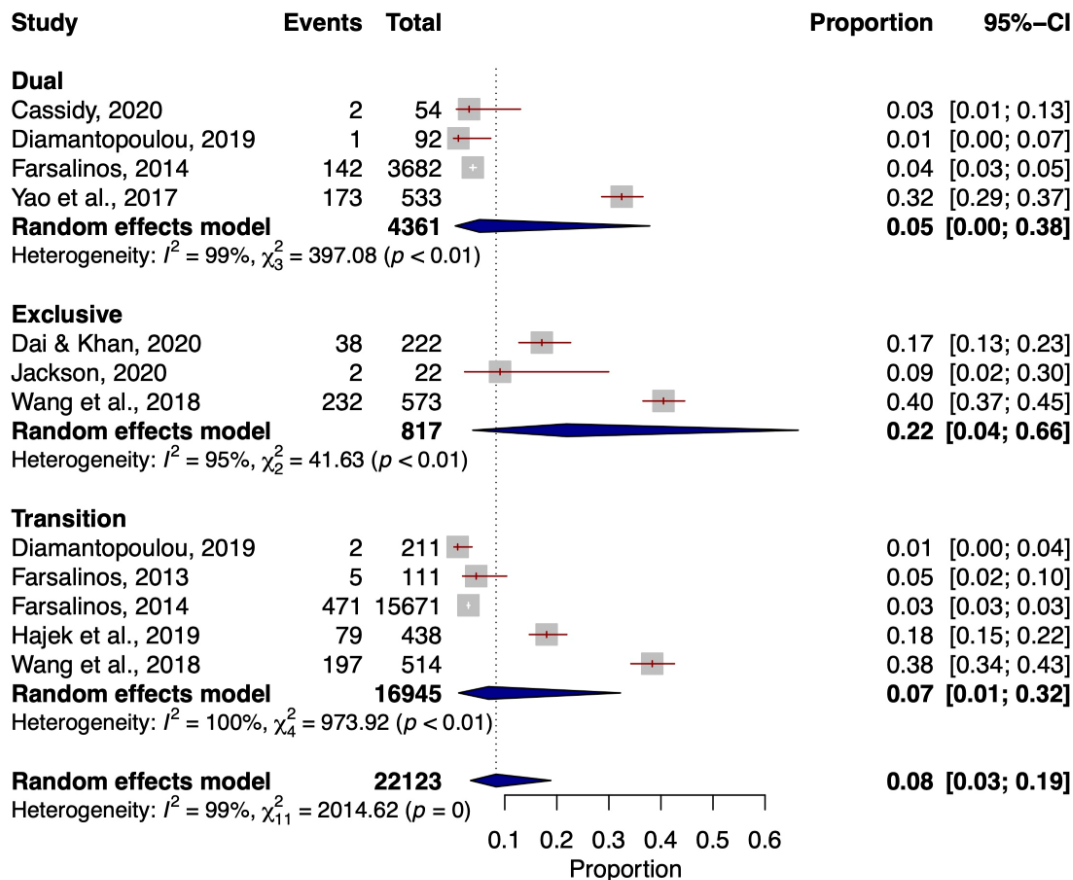


Figure 5: Forest plot of chest pain symptom prevalence among dual, exclusive, and transitioning e-cigarette users. Legend: This forest plot illustrates the prevalence of chest pain symptoms across e-cigarette user groups. Each study is denoted by a line, with square markers reflecting

the reported prevalence and the line width displaying the 95% CI. Diamond markers aggregate the pooled prevalence for each user group.

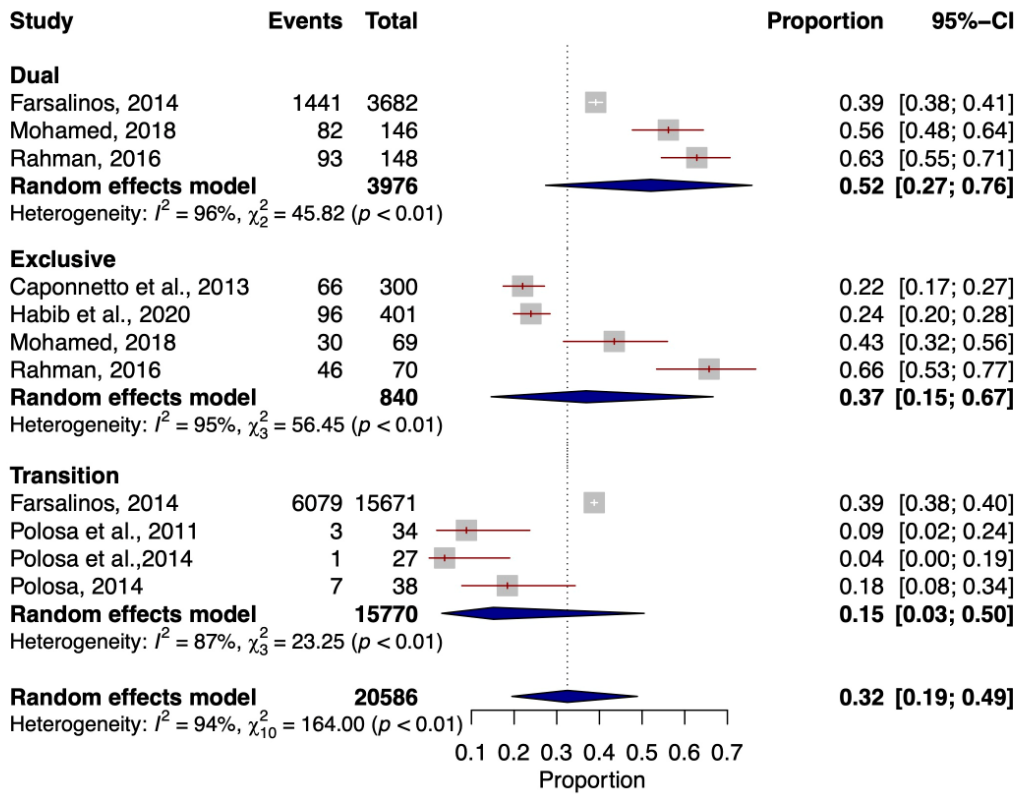


Figure 6: Forest plot of nasopharyngeal symptom prevalence among transitioning e-cigarette users. Legend: This forest plot depicts the prevalence of nasopharyngeal symptoms in transitioning e-cigarette users. Each study is represented by a line, with square markers indicating the reported prevalence and the line width showing the 95% CI. Diamond markers consolidate the pooled prevalence for the user group.

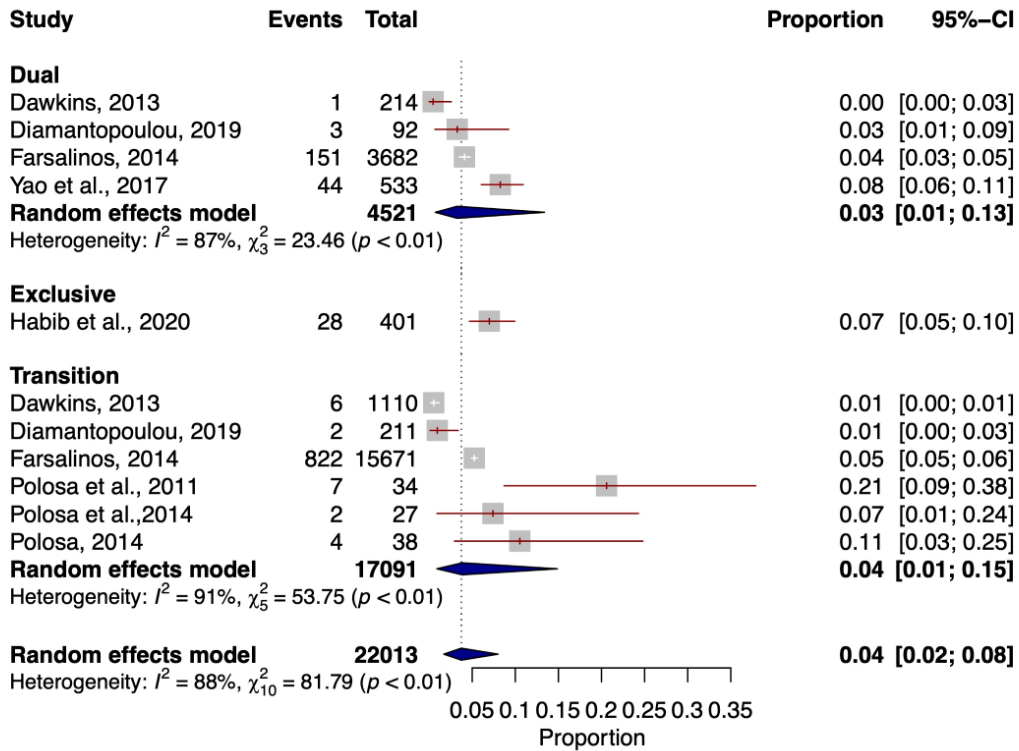


Figure 7: Forest plot of throat irritation symptom prevalence among dual, exclusive, and transitioning e-cigarette users. Legend: This forest plot showcases the prevalence of throat irritation symptoms across different e-cigarette user groups. Each study is denoted by a line, with square markers reflecting the reported prevalence and the line width indicating the 95% CI. Diamond markers summarize the pooled prevalence for each user category.