Appendix: Method of meta-analysis

Variance of the studies and their weights in fixed model are given as follow [Ref]:

\( v_i = \frac{p_i (1 - p_i)}{n_i} \) and \( w_i = 1 / v_i \), where \( i \), \( n_i \) and \( p_i \) denote index, sample size and prevalence of the study respectively. Using average weight and its variance as follow, \( \bar{w} = \frac{\sum_i w_i}{k} \) and \( s_w^2 = \frac{(\sum_i w_i^2 - k\bar{w}^2)}{(k-1)} \), we calculated statistic \( U \) and \( \hat{\tau} \) as

\[
U = (k - 1) \left\{ \frac{\bar{w} - s_w^2/k\bar{w}}{\bar{w}} \right\} \quad \text{and} \quad \hat{\tau} = \max\{0, \frac{Q - (k - 1)}{U}\}.
\]

Then, weight in random-effect model and pooled prevalence were obtained by

\[
w_i^* = \frac{1}{\tau^2 + v_i}, \quad \text{and} \quad \hat{p} = \frac{\sum_i w_i^* p_i}{\sum_i w_i^*}.
\]

To assess heterogeneity among study, we calculated the Index of inconsistency \( I^2 \) [24] as

\[
Q = \sum_i w_i (p_i - \hat{p})^2 \quad \text{and} \quad I^2 = 100 \times \frac{Q - (k - 1)}{Q}.
\]