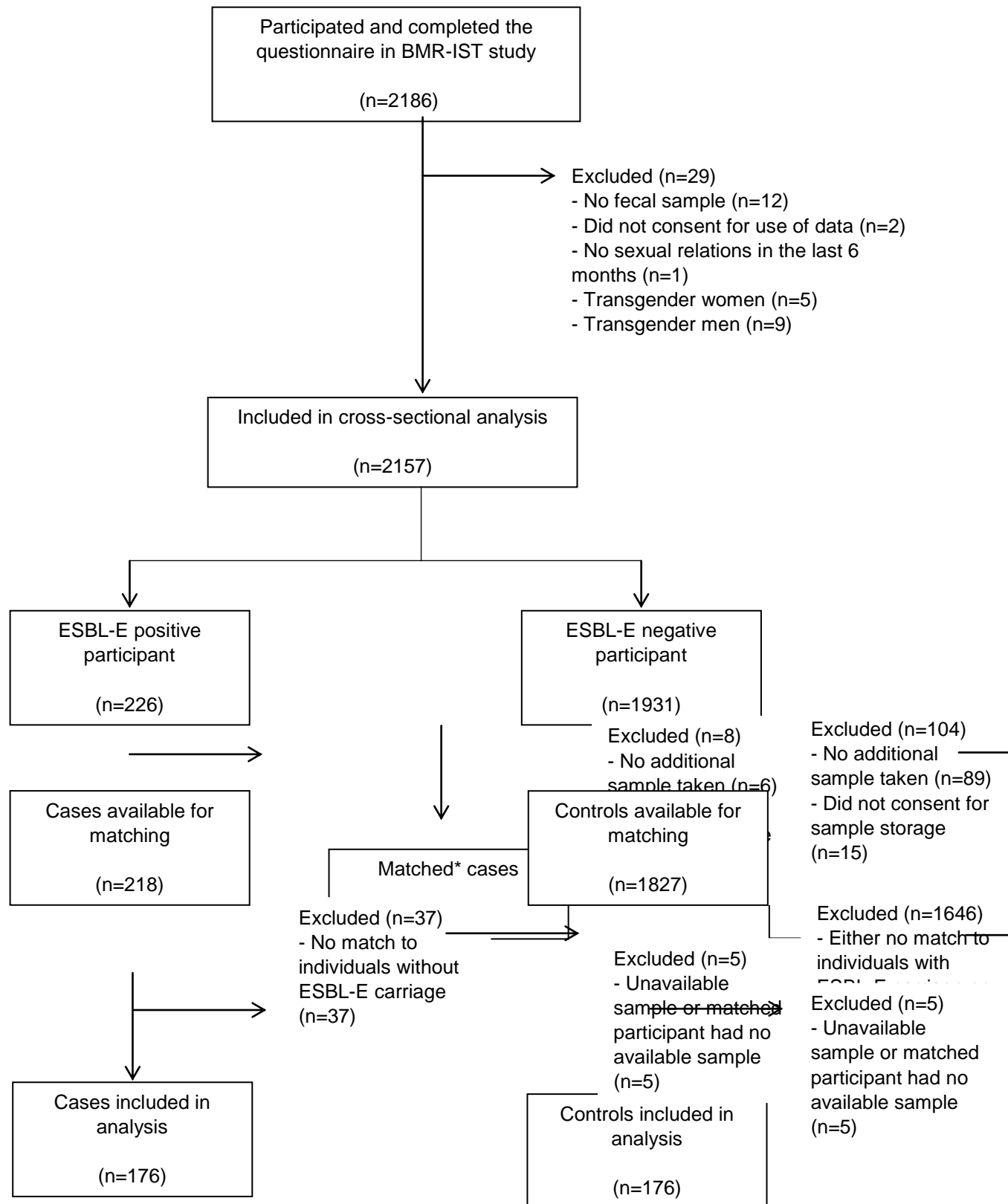


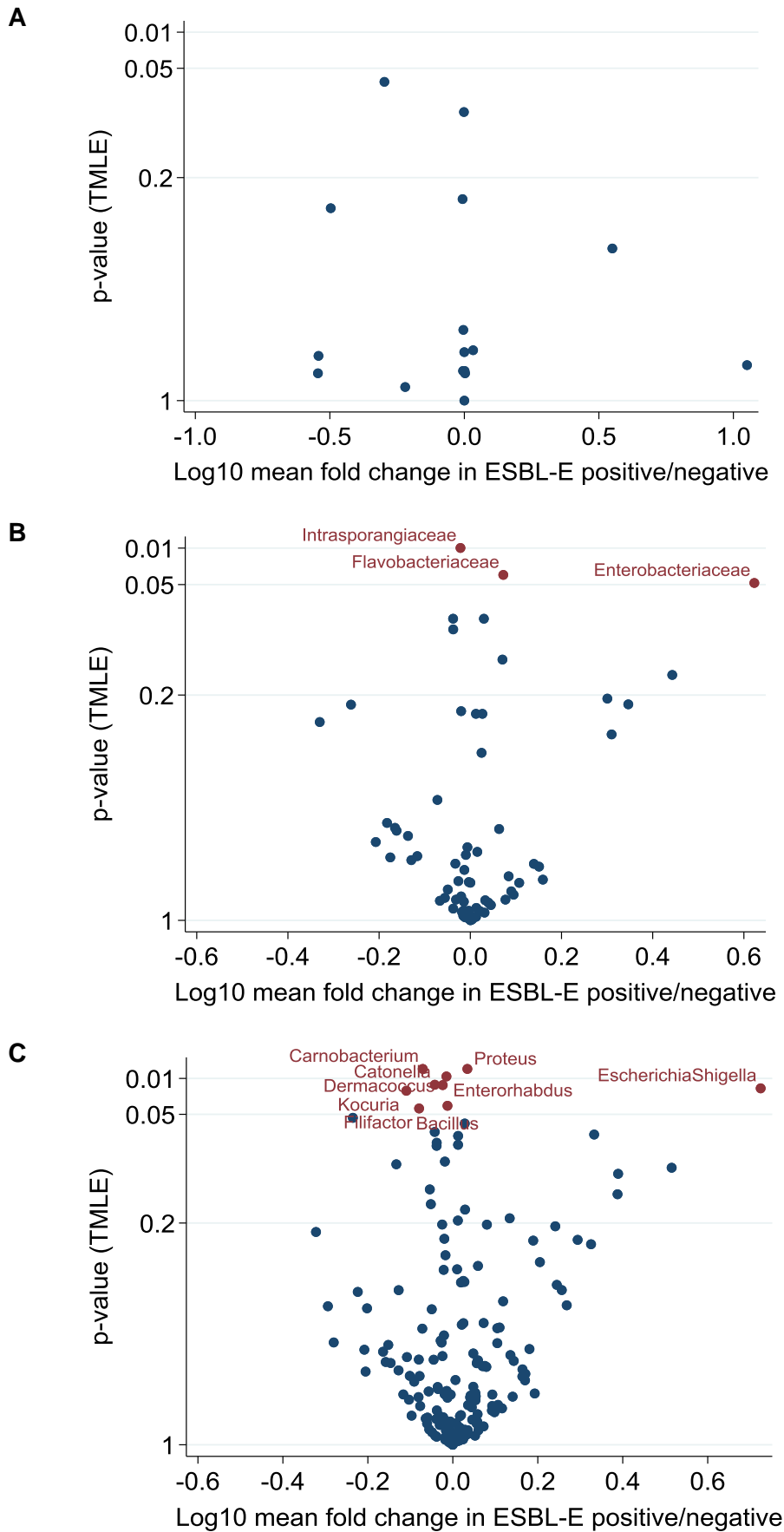
**Figure 1. Participant flow chart**



\*Individuals were matched on the following characteristics: sexual group, ESBL-E prevalence of countries traveled in the previous 12 months, number of sexual partners in the previous 6 months [log(n+1)-transformed], geographic origin, and any antibiotic use in the previous 6 months.

Abbreviations: BMR-IST study, Bactériers MultiRésistantes-Infectious sexuellement transmissibles study; ESBL-E, extended spectrum  $\beta$ -lactamase-producing *Enterobacterales*.

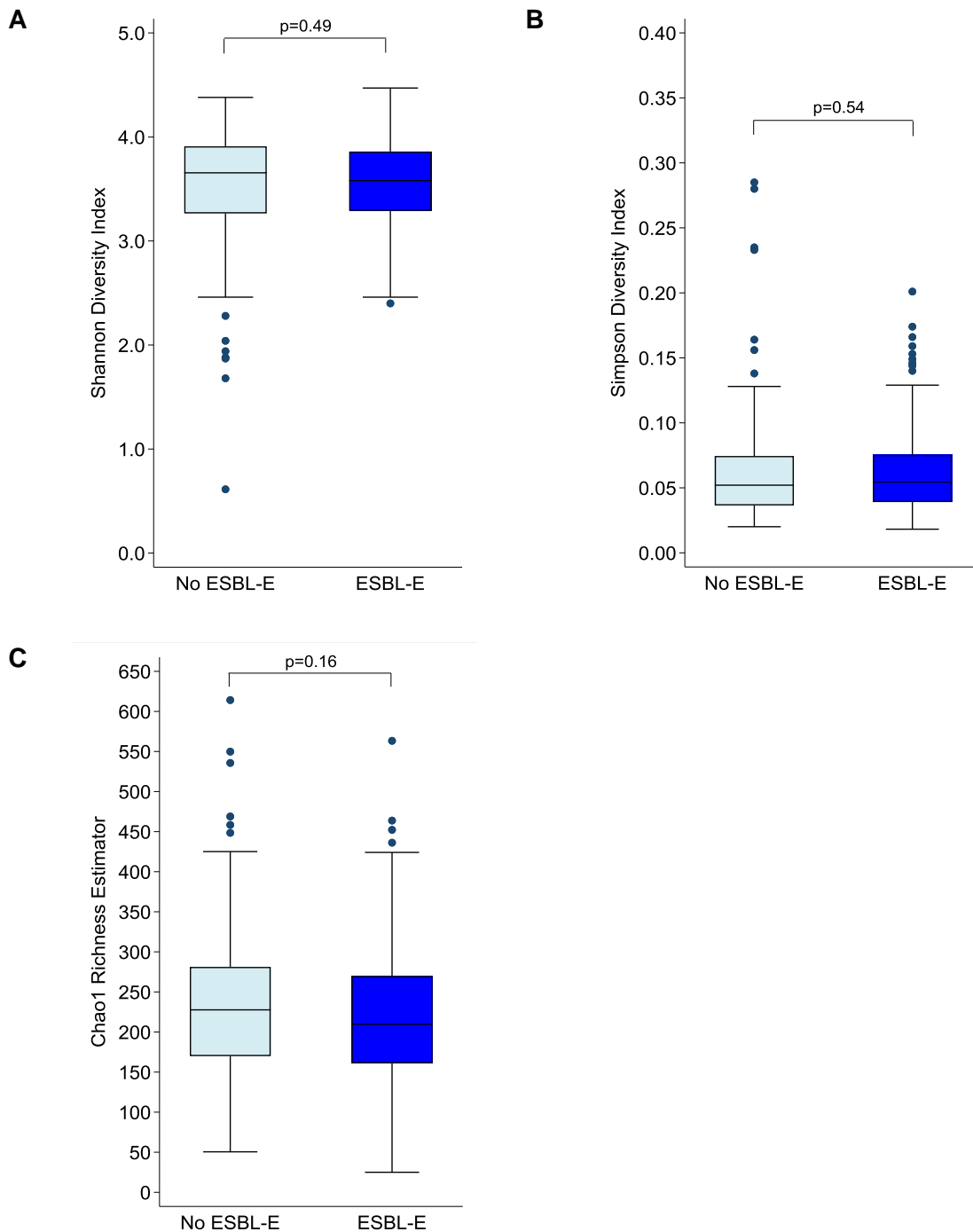
**Figure 2. Differences in relative abundances of gut microbiome between individuals with and without ESBL-E carriage**



The mean  $\log_{10}$  difference in relative abundances at the phylum (A), family (B), and genus (C) level between cases and controls are plotted in function of their p-value. These values were obtained using targeted maximum likelihood estimation. Variance was estimated using an ensemble of machine learning techniques.

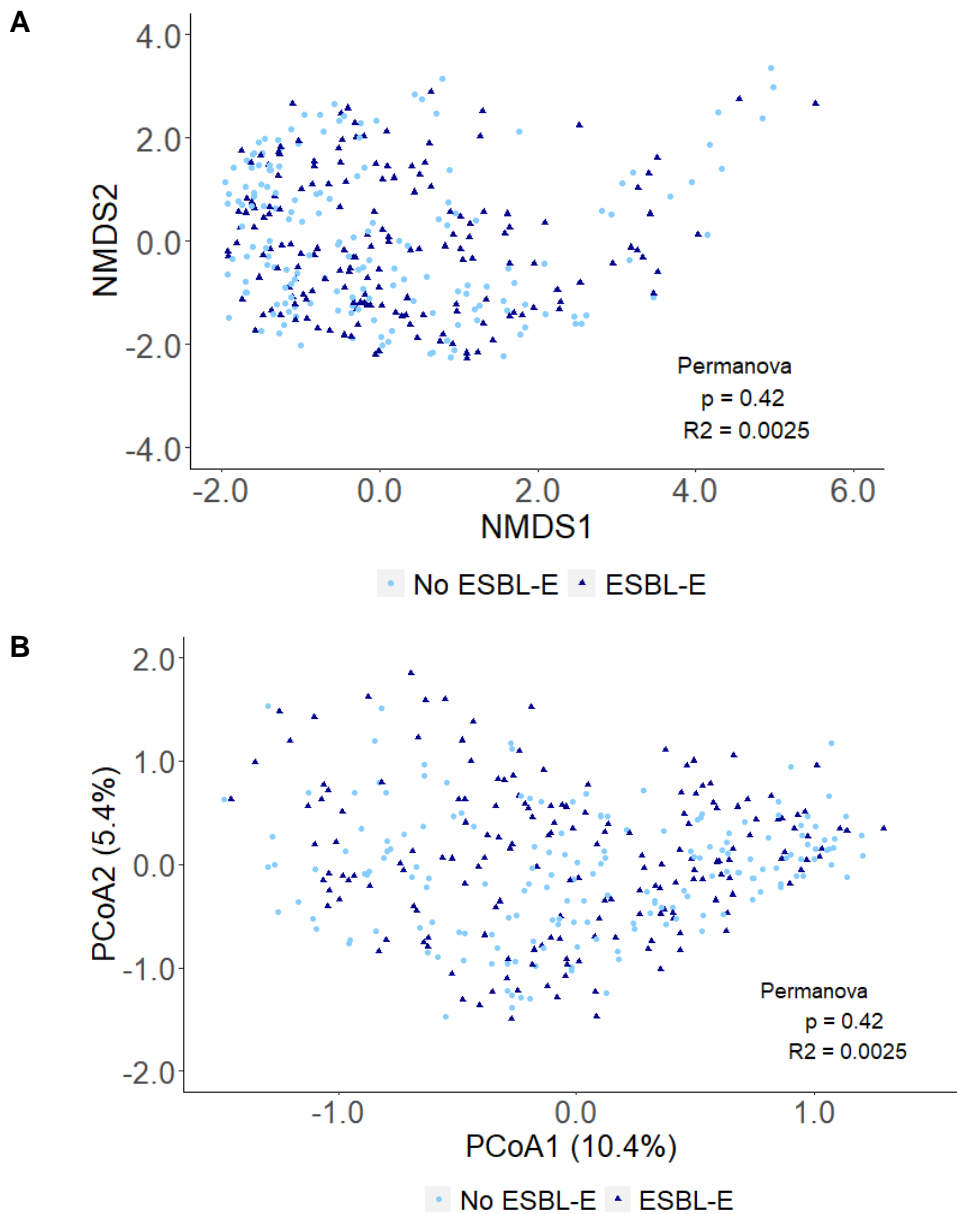
Abbreviations: ESBL-E, extended spectrum  $\beta$ -lactamase-producing *Enterobacterales*.

**Figure 3. Analysis of  $\alpha$ -diversity between those with and without ESBL-E carriage**



Box-plots representing the distributions of the Shannon Diversity Index (**A**), Simpson Diversity Index (**B**) and Chao1 Richness Estimator (**C**), according to ESBL-E carriage status. Distributions were compared between participants with and without ESBL-E carriage using the Kruskal-Wallis rank test. Two participants with a Simpson Diversity Index above 0.40 were excluded from the graph in panel **B**. Abbreviations: ESBL-E= Extended-Spectrum  $\beta$ -Lactamase-Producing *Enterobacterales*.

**Figure 4. Analysis of  $\beta$ -diversity between those with and without ESBL-E carriage**



Non-metric multidimensional scaling ordination (**A**) and Principal Coordinates Analysis (**B**) plot of dissimilarities for microbial communities between individuals with and without ESBL-E carriage. Dissimilarities were calculated using the Bray-Curtis method. Analyses were based on relative abundances.