Discovering effect modification in observational studies

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There is effect modification if the magnitude or stability of a treatment effect varies systematically with the level of an observed covariate. A larger or more stable treatment effect is typically less sensitive to bias from unmeasured covariates, so it is important to recognize effect modification when it is present. Additionally, effect modification is of interest for personalizing treatments, for example using genetic information to choose the best treatment for a patient. We present a method for conducting a sensitivity analysis in an observational study that empirically discovers effect modification by exploratory methods, but controls the family-wise error rate or false discovery rate in discovered groups.

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