



FIG 1. (a) IV model with no confounding between  $Z$  and  $X$ ; (b) SWIG representing  $P(Z, X(z), Y(x), U)$ ; (c) IV model with confounding between  $Z$  and  $X$ ; (d) SWIG representing  $P(Z, X, Y(x), U, U^*)$ .

