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Cross-section and panel estimates of peer effects in early adolescent cannabis use: With a little help from my 'friends once removed'

John Moriarty, Duncan McVicar, Kathryn Higgins

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"Cross-section and Panel Estimates of Peer Effects in Early Adolescent Cannabis Use: With a Little Help from my 'Friends Once Removed' "

Abstract:

Peer effects in adolescent cannabis are difficult to estimate, due in part to the lack of appropriate data on behaviour and social ties. This paper exploits survey data that have many desirable properties and have not previously been used for this purpose. The data set, collected from teenagers in three annual waves from 2002-2004 contains longitudinal information about friendship networks within schools (N = 5,020). We exploit these data on network structure to estimate peer effects on adolescents from their nominated friends within school using two alternative approaches to identification. First, we present a cross-sectional instrumental variable (IV) estimate of peer effects that exploits network structure at the *second degree*, i.e. using information on friends of friends who are not themselves ego's friends to instrument for the cannabis use of friends. Second, we present an individual fixed effects estimate of peer effects using the full longitudinal structure of the data. Both innovations allow a greater degree of control for correlated effects than is commonly the case in the substance-use peer effects literature, improving our chances of obtaining estimates of peer effects than can be plausibly interpreted as causal. Both estimates suggest positive peer effects of non-trivial magnitude, although the IV estimate is imprecise. Furthermore, when we specify identical models with behaviour and characteristics of randomly selected school peers in place of friends', we find effectively zero effect from these 'placebo' peers, lending credence to our main estimates. We conclude that cross-sectional data can be used to estimate plausible positive peer effects on cannabis use where network structure information is available and appropriately exploited.