Psychological Medicine (2012), **42**, 445–446.

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Psychological Medicine, **42** (2012).
doi:10.1017/S0033291711002546
First published online 16 November 2011

Letter to the Editor

Childhood trauma may combine synergistically with stimulant use rather than cannabis use to predict psychosis

Early experiences of physical and sexual abuse are considered to contribute to the development of psychosis later in life (Read *et al*. 2005; Schreier *et al*. 2009; Arseneault *et al*. 2011). Similarly, cannabis use has been linked to an increased risk of psychosis and an earlier age of onset of psychotic illness (Moore *et al*. 2007; Large *et al*. 2011). A growing number of studies have shown that childhood trauma and cannabis use can combine more-than-additively to produce a highly elevated risk of psychotic symptoms and psychosis (e.g. Houston *et al*. 2008; Harley *et al*. 2010).

Most recently, two studies published in *Psychological Medicine* have shown that: (i) psychotic symptoms are particularly likely to occur amongst cannabis users with a history of childhood physical or sexual mistreatment (Konings *et al*. 2011), and (ii) that psychosis risk is enhanced amongst cannabis users who have experienced non-consensual sex before the age of 16 years (Houston *et al*. 2011). Crucially, neither study considered the possibility that the risk posed by prior trauma could be enhanced amongst cannabis users because individuals in this group are also likely to have taken illicit psychostimulants implicated in the development of psychosis (Fergusson & Horwood, 2000; Lynskey *et al*. 2003; Curran *et al*. 2004; Barnett *et al*. 2007). To test this idea, I examined data from 7125 participants drawn from the Adult Psychiatric Morbidity Survey 2007, as utilized in Houston *et al*. (2011).

As shown in Houston *et al*. (2011), cannabis use moderated the link between non-consensual sex in childhood and psychotic disorder in the last week [odds ratio (OR) 10.53, 95% confidence interval (CI) 1.14–99.64; all analyses were adjusted for age, gender, ethnicity, education, employment, alcohol use, sexual trauma after age 16 years, presence of neurotic disorder, and, where appropriate, cannabis and stimulant use]. Similarly, stimulant use (cocaine, ecstasy or amphetamines) combined with non-consensual sex before the age of 16 years to predict a raised risk of psychosis (OR 16.75, 95% CI 1.79–157.2). Cannabis dependency levels did not interact with non-consensual sex to predict psychosis, suggesting that psychostimulant use is not merely a proxy for the effects of high levels of cannabis consumption.

Critically, adjusting for the under-16 sex × stimulant use interaction removed the link between the under-16 sex × cannabis use interaction and psychosis (OR 8.22, 95% CI 0.48–140.9). As anticipated, the link between under-16 sex and psychosis amongst cannabis users (OR 17.43, 95% CI 2.61–116.43; illustrated in Fig. 1*a*) was found to be attributable to a strong link between non-consensual sex in childhood and psychosis amongst the 37.1% of cannabis users who have also taken stimulants (OR 77.7, 95% CI 10.39–581.1 in age and gender adjusted analysis; OR 70.71, 95% CI 1.38–3631 in fully adjusted analysis), as shown in Fig. 1*b*. Early non-consensual sex was unrelated to psychosis amongst those who had used cannabis alone.

Taken together, these findings suggest that stimulant use amongst cannabis users rather than cannabis use alone may enhance the impact of childhood trauma on the likelihood of developing psychotic disorder. Future studies examining cannabis × trauma interactions in psychosis should include the main effect of stimulants and interactions between trauma and stimulants in their analyses. Such an approach may uncover novel relations and will ensure that those examining synergistic relations between cannabis use and adverse experiences accurately identify the specific drugs that contribute to psychosis risk.

Declaration of Interest

None.

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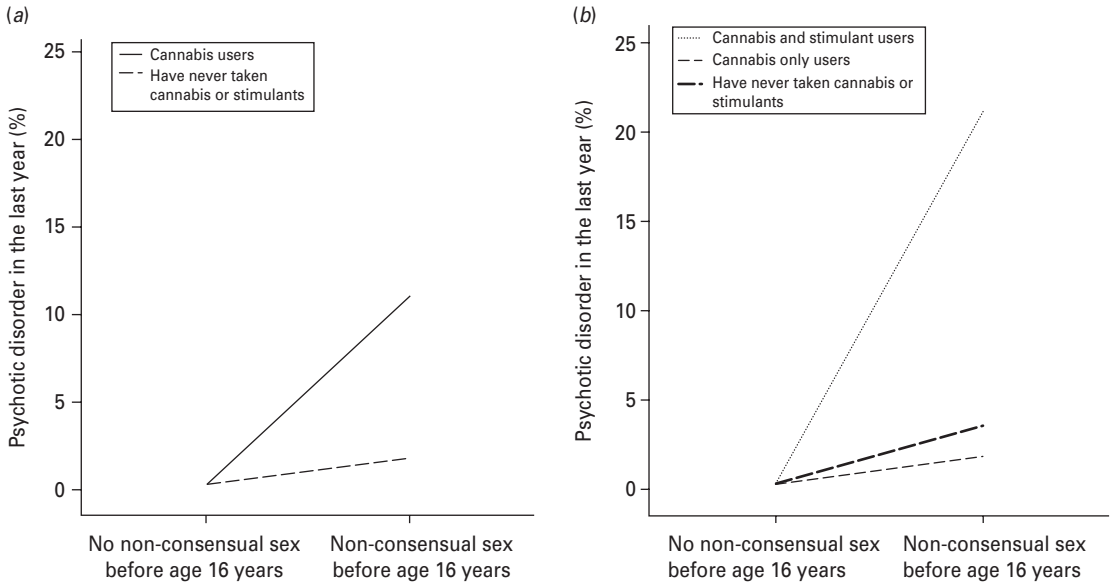

Fig. 1. Relationship between non-consensual sex before the age of 16 years and psychosis for: (*a*) those who have used cannabis and those who have not taken cannabis or stimulants (cocaine, amphetamines or ecstasy); and (*b*) cannabis users who have taken stimulants, cannabis-only users and those who have not taken cannabis or stimulants. Note: participants who have used stimulants but not cannabis (approximately 1% of the sample) were excluded for illustration purposes.

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