

Baseline depressive symptoms were associated with smoking initiation in adolescents

Escobedo LG, Reddy M, Giovino GA. *The relationship between depressive symptoms and cigarette smoking in US adolescents.* *Addiction* 1998 Mar; **93**:433–40.

Question

Do depressive symptoms at baseline influence rates and patterns of smoking initiation and cessation at follow up in adolescents?

Design

Inception cohort of adolescents sampled from the community and followed up for 4 years (Teenage Attitudes and Practices Survey [TAPS]).

Setting

USA.

Participants

7885 adolescents (51% boys) who were 10–18 years of age at baseline and lived in households selected for the US National Health Interview Survey (last 2 quarters of 1988 and the first 2 quarters of 1989). 5828 adolescents (53% boys) without baseline depressive symptoms and 1228 adolescents (60% girls) with baseline depressive symptoms were analysed for smoking initiation; 576 smokers (59% boys) without baseline depressive symptoms and 253 smokers (62% girls) with baseline depressive symptoms were analysed for smoking cessation. Non-smokers included *puff smokers* (had smoked 1 but not 100 cigarettes), *former or experimental smokers* (had smoked ≥ 100 cigarettes but had not smoked in the previous month), and *occasional smokers* (had smoked 1 cigarette and had smoked < 5 days in the previous month).

Assessment of prognostic factors

Race, school performance, risk taking behaviour, presence of smokers in the household, age, and parental education were assessed for potential confounding effects.

Main outcome measures

Number of non-smokers who began smoking regularly (smoked ≥ 5 cigarettes in the previous month) and number of regular

smokers who stopped smoking (did not smoke in the previous 30 days and did not think they would be smoking 1 year later).

Main results

After adjustment for race, school performance, risk taking, and presence of smokers in the household, depressed adolescents were more likely than non-depressed adolescents to start smoking regularly (table). No association between depressive symptoms and smoking cessation rates was seen after further adjustment for age and parental education (table).

Conclusions

Adolescents with baseline depressive symptoms were more likely than those without depressive symptoms to start smoking regularly. No association was seen between baseline depressive symptoms in adolescent smokers and cessation rates for smoking 4 years later.

Association between baseline depressive symptoms and smoking patterns in adolescents

Outcomes after 4 years	Adjusted odds ratio (95% CI)
Smoking initiation rate	1.3 (1.1 to 1.6)*
Smoking cessation rate	0.7 (0.5 to 1.1)†

*Adjusted for race, school performance, risk taking behaviour, presence of smokers in household, and region.

†Not significant. Adjusted for race, school performance, risk taking behaviour, presence of smokers in household, region, and parental education.

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Commentary

Understanding the aetiology of smoking, especially in adolescence, is important for preventing or reducing smoking. Because smoking is a naturally occurring phenomenon, it is difficult to disentangle spurious from true causal effects of suspected risk factors. The study by Escobedo *et al* achieves this goal by using a longitudinal design and statistical controls. They reported that symptoms of depression and anxiety at baseline increased the risk of smoking 4 years later. The observed effect, although small, is of considerable importance given the relatively high prevalence of depressive and anxious symptoms among adolescents. None the less, important questions remain. The authors referred to the risk of becoming a regular smoker (ie, having smoked 5 days in the previous month) as a risk of smoking initiation, a term that signifies smoking for the first time. In 1 analysis, the

authors estimated the risk of regular smoking in adolescents who had been non-smokers, ever-smokers, or occasional smokers, which combines initiation and progression to regular smoking. In another analysis, they reported the incidence of *regular smoking* among adolescents who had never smoked, providing a clearer test of the role of depressive symptoms in regular smoking. Had they also reported the combined incidence of *any stage of smoking* during the 4 year interval, we could gain insight into the effects of depressive symptoms on smoking initiation as distinct from progression to greater involvement.

The importance of this distinction stems from research showing that initiation and progression of adolescent drug use might be preceded by different conditions. Initiation might result from social influences, such as peer use, whereas pro-

gression might be more closely tied to internal states, such as depressed mood. Evidence that major depression is a risk factor for progression to daily smoking has been reported.¹

Evaluation of the role of emotional distress in adolescents' initiation or progression of smoking should take into account the strong correlation of conduct problems with drug use and emotional distress.² The finding, however, that emotional distress, either alone or in conjunction with conduct problems, increases adolescents' vulnerability to smoking cannot be ignored.

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1 Breslau N, Peterson EL, Schultz LR *et al.* *Arch Gen Psychiatry* 1998; **55**:161–6.

2 Hawkins JD, Catalano RF, Miller JY. *Psychol Bull* 1992; **112**:64–105.