

Correspondence

Edited by Kiriakos Xenitidis and
Colin Campbell

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Tobacco smoking and depression: results of a cross-sectional study

A recent study by Boden *et al*¹ concluded that there is a cause-effect relationship between cigarette smoking and depression in which tobacco use increases the risk of symptoms of depression. In a large longitudinal study, Kang & Lee² showed that smoking caused depression. Shahab & West³ reported evidence from a cross-sectional survey that ex-smokers feel happier following cessation.

These results may have very important clinical consequences – if smokers can be reassured that their mood can be improved after smoking cessation, it could motivate patients in their attempts to quit. Our own data are consistent with such findings and with the current literature regarding the relationship between depression and smoking status as well as gender. We performed an investigation focusing on depression symptoms among 1021 unrelated blood donors categorised as former smokers, current smokers and never smokers. The sample distribution was: former smokers, $n=131$; current smokers, $n=254$; and never smokers, $n=636$. Former smokers were individuals who had reached 6 months of tobacco abstinence. Using a cross-sectional design, the participants were selected during the period from October 2004 to August 2008. Inclusion criteria were: to be Brazilian of European descent, ≥ 18 to ≤ 65 years old, male or female and eligible for blood donation. Exclusion criteria included other addictions, current use of any psychopharmacological medication and major psychopathologies, except major depressive disorder. All participants completed a standardised self-report questionnaire that included demographic characteristics and a smoking history. Depression symptoms were evaluated by the Portuguese version of the Beck Depression Inventory (BDI).^{4,5} The BDI scores were analysed as a continuous measure or as a cut-off of ≥ 15 indicating depressive symptoms.

Level of education was higher among never smokers ($n=164$, 25.8%) compared with current smokers ($n=40$, 15.7%) and former smokers ($n=24$, 18.3%) ($\chi^2_4=21.56$, $P<0.001$). This suggests that current and former smokers might share a premorbid behavioural profile different from never smokers. More current smokers had a BDI score ≥ 15 (current smokers, $n=38$, 15.0%; never smokers, $n=47$, 7.4%; former smokers, $n=9$, 6.9%; $\chi^2_2=13.43$, $P=0.001$). Average BDI scores were also higher among current smokers (mean 7.4, s.d.=7.8) compared with never smokers (mean 5.2, s.d.=6.5) and former smokers (mean 5.0, s.d.=5.6) even after adjustment for gender, age and years of schooling ($F=10.93$, $P<0.001$). There were no significant differences between former and never smokers on depression indices. There was no significant interaction between smoking

status and gender – that is, females had higher depression scores than males, regardless of smoking status, pointing to the cross-gender validity of the association. Beck Depression Inventory scores were significantly correlated with Fagerström Test for Nicotine Dependence⁶ scores ($r=0.16$, $P=0.01$) and average daily number of cigarettes smoked ($r=0.16$, $P=0.01$). The results of our relatively large sample suggest that depression scores are lower among former smokers, despite the similar profiles in other characteristics such as education and gender across all three groups.

This issue has been raised by other authors. Wu & Anthony⁷ verified in a longitudinal study that although smoking increased the risk for depression, antecedent depressed mood was not associated with later cigarette smoking. A review by the National Institute of Mental Health⁸ pointed out the danger posed by over-reliance on the self-medication hypothesis. According to the authors, this misconception may have led to a grossly inadequate attention to tobacco-smoking in mental health settings. Munafò *et al*⁹ have suggested a causal relationship between cigarette smoking and depression.

The interpretation of our results should be cautious, since cause-effect relationships cannot be explained in cross-sectional studies, where recall bias is always a possibility. Former smokers may differ from current smokers both in terms of their primary depression and nicotine dependence severity. As Fagerström & Furberg⁶ pointed out, less dependent smokers may quit more easily and remaining dependent smokers may need more intensive treatment. Another scenario is that previous depressive symptoms might have predisposed some individuals to smoke, and when symptoms faded, they stopped smoking.

Our preliminary results are consistent with these findings, suggesting that former smokers have a better mood than current smokers. If confirmed in future follow-up studies, this evidence will certainly stimulate new approaches for smoking prevention in adolescence and smoking cessation techniques for adults. If smokers can be reassured that their mood may actually improve after smoking cessation, once the withdrawal syndrome has ended,¹⁰ this knowledge could motivate patients in their attempts to quit. We agree with this position and suggest that it is equally valid for both genders.

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- 1 Boden JM, Fergusson DM, Horwood LJ. Cigarette smoking and depression: tests of casual linkages using a longitudinal birth cohort. *Br J Psychiatry* 2010; **196**: 440–6.
- 2 Kang E, Lee J. A longitudinal study on the causal association between smoking and depression. *J Prev Med Public Health* 2010; **43**: 193–204.
- 3 Shahab L, West R. Do ex-smokers report feeling happier following cessation? Evidence from a cross-sectional survey. *Nicotine Tob Res* 2009; **11**: 553–7.
- 4 Beck AT, Steer RA, Garbin MG. Psychometric properties of the Beck Depression Inventory: twenty-five years of evaluation. *Clin Psychol Rev* 1988; **8**: 77–100.
- 5 Gorenstein C, Andrade L. Validation of a Portuguese version of the Beck Depression Inventory and the State-Trait Anxiety Inventory in Brazilian subjects. *Braz J Med Biol Res* 1996; **29**: 453–7.
- 6 Fagerström K, Furberg H. A comparison of the Fagerström Test for Nicotine Dependence and smoking prevalence across countries. *Addiction* 2008; **103**: 841–5.
- 7 Wu LT, Anthony JC. Tobacco smoking and depressed mood in late childhood and early adolescence. *Am J Public Health* 1999; **89**: 1837–40.
- 8 Ziedonis D, Hitsman B, Beckham JC, Zvolensky M, Adler LE, Audrain-McGovern J, et al. Tobacco use and cessation in psychiatric

disorders: National Institute of Mental Health report. *Nicotine Tob Res* 2008; **10**: 1691–715.

- 9 Munafò MR, Hitsman B, Rende R, Metcalfe C, Niaura R. Effects of progression to cigarette smoking on depressed mood in adolescents: evidence from the National Longitudinal Study of Adolescent Health. *Addiction* 2008; **103**: 162–71.
- 10 Munafò MR, Araya R. Cigarette smoking and depression: a question of causation. *Br J Psychiatry* 2010; **196**: 425–6.

Vanessa Argondizo dos Santos, School of Medicine, Pontifícia Universidade Católica Rio Grande do Sul; **Ana Maria Migott**, School of Medicine, Universidade de Passo Fundo; **Claiton Henrique Dotto Bau**, Department of Genetics, Instituto de Biociências, Universidade Federal do Rio Grande do Sul; **José Miguel Chatkin**, Av. Ipiranga 6690, room 315, 3rd floor, School of Medicine Graduation Office, Pontifícia Universidade Católica Rio Grande do Sul, Porto Alegre 90610-000, Brazil. Email: jmchatkin@pucrs.br

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Does medication benefit the long-term psychiatric outcomes of children with ADHD?

Langley and colleagues¹ reported 5-year follow-up outcomes of young children with attention-deficit hyperactivity disorder (ADHD) and the maternal and social factors related to the prognosis. The findings provide evidence of high comorbidity of antisocial behaviours associated with ADHD, drawing attention to the long-term outcomes of the disorder. Yet, in my opinion, additional information needs to be clarified regarding the findings.

The authors showed that medication use was not significantly associated with conduct disorder diagnosis or other antisocial behaviours. However, this interesting result was not discussed in detail in the article. What I am interested in is whether medication could reduce the risk of developing psychiatric diseases. Recently, studies have shown that treatment with stimulant drugs for ADHD could reduce the risk for some psychiatric disorders. In a systematic review, Wilens *et al*² reported that medication in childhood was associated with a reduction in the risk for subsequent substance misuse. Biederman *et al*³ showed that stimulant treatment of youths with ADHD decreased the risk for depressive and anxiety disorders and disruptive behaviour later in life. Both studies indicate that medication can benefit psychiatric outcomes. In Langley *et al*'s study,¹ most of the participants (63%) received prescribed stimulant drugs, but the psychological outcomes were not optimistic regarding the prognosis of conduct disorder. Does this result suggest that medication is not beneficial for children with ADHD in the long term? What can account for it? In addition, why did children who were prescribed medication have more ADHD symptoms than those no longer using medication?¹

- 1 Langley K, Fowler T, Ford T, Thapar AK, van den Bree M, Harold G, *et al*. Adolescent clinical outcomes for young people with attention-deficit hyperactivity disorder. *Br J Psychiatry* 2010; **196**: 235–40.
- 2 Wilens TE, Faraone SV, Biederman J, Gunawardene S. Does stimulant therapy of attention-deficit/hyperactivity disorder beget later substance abuse? A meta-analytic review of the literature. *Pediatrics* 2003; **111**: 179–85.
- 3 Biederman J, Monuteaux MC, Spencer T, Wilens TE, Faraone SV. Do stimulants protect against psychiatric disorders in youth with ADHD? A 10-year follow-up study. *Pediatrics* 2009; **124**: 71–8.

Rongwang Yang, MD, Department of Child Psychology, The Children's Hospital, Zhejiang University School of Medicine, China. Email: colortea@zuaa.zju.edu.cn

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Authors' reply: We agree that the influence of prescribed medication on the long-term psychological outcomes associated

with ADHD is an interesting and important area of research. However, we regret that our study is not best placed to address these issues.

Our study utilised a naturalistic design, identifying children recently diagnosed with ADHD through child and adolescent mental health services and paediatric clinics in the UK. As such, no restrictions or controls were placed on the prescription or continuation of stimulant medication in this group. To adequately test the questions posed by Dr Yang, specifically designed trials are required – well beyond the scope of our article.

Our findings indicated that prescription of medication at follow-up was associated with higher rates of ADHD symptoms, but not with the other psychological outcomes we assessed (including conduct disorder and substance use). Because our study does not provide sufficient data on stimulant use over time and because the majority (90%) were prescribed stimulant medication at some point, we did not expand further on the reasons for these findings, nor can we speculate on why those prescribed medication at follow-up had more ADHD symptoms.

We are therefore grateful to Dr Yang for highlighting this important area for research, but regret that we cannot address these queries using our data.

Kate Langley, Department of Psychological Medicine and Neurology, School of Medicine, Cardiff University, Heath Park, Cardiff, CF14 4XN, UK. Email: langleyk@cf.ac.uk; **Tom Fowler**, Department of Psychological Medicine and Neurology, School of Medicine, Cardiff University; **Tamsin Ford**, Child Health Group, Peninsula Medical School, University of Exeter; **Ajay K. Thapar**, **Michael J. Owen**, **Michael C. O'Donovan**, **Anita Thapar**, Department of Psychological Medicine and Neurology, School of Medicine, Cardiff University, UK

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Erasing trauma memories

Recent elegant research has raised the salient issue of altering traumatic memories and its treatment implications. Kindt *et al*¹ suggest that 'if emotional memory could be weakened or even erased, then we might be able to eliminate the root of many psychiatric disorders, such as post-traumatic stress disorder'. In a similar vein, Schiller *et al*² reported that 'fearful memories can be wiped out for at least a year using a drug-free technique'. The prospect of erasing distressing memories is indeed compelling and has led to widespread media coverage.

However, this issue elicits important ethical and clinical considerations: first, would we want to erase trauma memories, and second, is it clinically helpful to erase such memories?

Loss of knowledge about the past or oneself may be ethically problematic, although reducing suffering clearly may take precedence.³ Our sense of self is constructed from autobiographical memories, and the authenticity of how they link and our trust in this narrative is important for well-being. Furthermore, losing memory can compromise a victim's ability to provide legal evidence: autonomy and beneficence may trump justice, but it would be better if the evidence could be used and the victim did not suffer.

Paradoxically, erasing memories of trauma may not in itself reduce suffering and could even lead to the reverse. In clinical cases where explicit memory of an event has been lost, for example owing to a severe head injury or drug rape (e.g. via flunitrazepam), extreme distress can ensue. The clinical literature suggests that avoidance of trauma memories is associated with worse rather than improved outcome.

We note that the data in the above papers do not in fact indicate memory 'erasure'. Rather, both studies found that fear