

# **Cigarette smoking and mental health in England**

**Data from the Adult Psychiatric  
Morbidity Survey 2007**



Sally McManus, Howard Meltzer and Jonathan Campion  
December 2010

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# Executive Summary

This brief report sets out data from the national 2007 Adult Psychiatric Morbidity Survey relating to smoking rates in the English general population. Rates are examined by whether or not people were assessed as having a mental disorder (or in some cases whether or not they screened positive for one). An estimate is also made of what proportion of overall cigarette consumption is accounted for by people with a mental disorder. The data analysis was age-standardised so that differences between groups were not attributable to differences in their age profiles. However, other potentially confounding factors were not controlled for.

## People with a mental disorder are more likely to smoke

Overall, according to data collected on the APMS 2007 survey, 22% of the English population smoke seven or more cigarettes per week (the definition of 'regular smoker' used in these analyses). Among the 23% of the population with any of the mental disorders covered by the survey, the smoking rate was much higher with 33 % being regular smokers.

## Smoking rates vary with type of disorder

Smoking rates were significantly higher for almost all those with mental disorders assessed or screened for on the survey. Among people with a common mental disorder (CMD) such as anxiety or depression, 32% were smokers, compared with 20% of people without a CMD. Smoking rates varied with type of CMD and were highest among people with depression (37%) and phobias (37%) and lowest among those with mixed anxiety and depression (29%). The likelihood of being a smoker was higher still among people with probable psychosis (40%), alcohol dependence (46%) and illicit drug dependence (69%, non-age-standardised estimate). 57% of people who had attempted suicide in the past year were smokers.

## People with a mental disorder account for a disproportionate amount of cigarettes smoked

The proportion of overall tobacco consumption accounted for by people with a mental disorder was crudely estimated. This took into account the proportion of the population assessed or screened in with different disorders and the average number of cigarettes smoked per week. Taking an inclusive definition of mental disorder, which includes people with alcohol or illicit drug dependencies and less common conditions such as psychosis, about 42% of all cigarettes smoked by the English general population are smoked by people with a mental disorder. Those with a common mental disorder (CMD) are the largest group, accounting for about a sixth of the population and about a third of all cigarettes smoked.

This estimate is likely to underestimate the true figure since APMS 2007 was a survey of people living in private households and so does not include people living in mental health

settings, prisons or who are homeless or in temporary housing which are groups known to have a higher rate of smoking.

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# 1 Previous research

## 1.1 Health impact of smoking

Smoking is the largest preventable cause of death in the UK and is responsible for an average 10 year lower life expectancy in the general population (Doll *et al.*, 2004). In 2009, almost one in five deaths (81,400) in England in adults over 34 years old was attributable to smoking (NHS Information Centre, 2010). Around 35% of all deaths from respiratory diseases, 29% of all cancer deaths, 14% of deaths from circulatory diseases and 6% of deaths from diseases of the digestive system are attributable to smoking (NHS Information Centre, 2010). In 2008/9, 462,900 hospital admissions were estimated to be attributable to smoking in those over 34 years old (NHS Information Centre, 2010). Heavy smokers are more prone to smoking related illness than people who smoke a lower average number of cigarettes, who in turn have worse health than non-smokers.

## 1.2 Smoking among people with a mental disorder

A lot of information on smoking rates among people with a mental disorder comes from the series of Adult Psychiatric Morbidity Surveys which were carried out in 1993, 2000 and 2007. However, as these are surveys of people living in private households, certain groups with higher rates of mental illness - such as homeless people (Gill *et al.*, 1996) and prisoners (Singleton *et al.*, 1998) – are not represented.

21% of the general population in England have been identified as dependent on tobacco (NHS Information Centre, 2010). At 22%, the 2007 APMS estimate of the proportion of the population who are 'regular smokers' was very similar. Analysis of data from APMS 2000 found smoking rates of 44% among people with common mental disorder (Farrell *et al.*, 2001) with a clear relationship between amount of tobacco smoked and numbers of depressive and anxiety symptoms (Coulter *et al.*, 2000). Smoking rates of 64% were found for people with probable psychosis (Coulter *et al.*, 2000).

In mental health units, 70% of patients smoke and 50% of patients are described as 'heavy smokers' (Jochelson and Majrowski, 2006). Another study has found a smoking rate of 76% among those with first episode psychosis (Wade *et al.*, 2006). Smoking is strongly associated with substance misuse, with a smoking rate of 80% among those attending Methadone Maintenance Treatment clinics (Nahvi *et al.*, 2006). Among adolescents, 30% of those with conduct disorder and 19% with emotional disorder were regular smokers compared to 5% without such disorders (Green *et al.*, 2005). This is important since 66% of current and ex-smokers started before the age of 18 (NHS

Information Centre, 2010). Furthermore, very few people start smoking for the first time after the early twenties (Amos *et al.*, (2009).

Level of nicotine dependence varies according to severity of the illness (Farrell *et al.*, 2001; Champion *et al.*, 2008). Smokers with mental health problems smoke more heavily, are more nicotine-dependent and have smoked for longer than smokers in the general population (Kumari and Postma, 2005).

### **1.3 Impact of smoking in those with mental illness**

A recent UK study highlighted that men living with schizophrenia living in the community have a 20.5 year reduced life expectancy while women with schizophrenia have 16.4 year reduced life expectancy. These can be regarded as conservative estimates of reduced life expectancy because those who were most unwell were excluded (Brown *et al.*, 2010). The largest proportion of this increased mortality and morbidity is attributable to greater tobacco consumption (Brown *et al.*, 2000; Brown *et al.*, 2010). In the USA, those with schizophrenia and bipolar disorder die on average 25 years earlier than the general population, largely from physical health problems (Parks *et al.*, 2006).

### **1.4 Proportion of tobacco consumption by those with mental disorder**

In the USA, people with a mental disorder account for 44% of total national tobacco consumption (Lasser *et al.*, 2000). At 42%, the estimate for Australia is very similar (SANE, 2007). Furthermore, 200,000 of the 440,000 annual deaths (45.5%) from tobacco in the USA are of people with mental illness or addictions (Williams and Ziedonis, 2004).

## References

- Amos A, Angus K, Bostock Y, Fidler J and Hastings G. (2009) *A review of young people and smoking in England*. Public Health Research Consortium
- Brown S, Barraclough B, Inskip H (2000). Causes of the excess mortality of schizophrenia. *British Journal of Psychiatry*, 176, 109-111.
- Brown S, Kim M, Mitchell C et al (2010) Twenty-five year mortality of a community cohort with schizophrenia. *British Journal of Psychiatry*, 196, 116-121.
- Campion J, Checinski K, Nurse J, McNeill A (2008). Smoking by people with mental illness and benefits of smoke-free mental health services. *Advances in Psychiatric Treatment*, 14, 217-228.
- Coultard M, Farrell M, Singleton N et al (2000) *Tobacco, Alcohol and Drug Use and Mental Health*. UK Department of Health.
- Doll R, Peto R, Boreham J, Sutherland I (2004). Mortality in relation to smoking: 50 years' observation on male British doctors. *British Medical Journal*, 328, 745.
- Farrell M, Howes S, Bebbington P et al. (2001). Nicotine, alcohol and psychiatric morbidity. Results of a national household survey. *British Journal of Psychiatry*, 179, 432-7.
- Gill, B., Meltzer, H., Hinds, K., Petticrew, M. (1996) *OPCS Surveys of Psychiatric Morbidity in Great Britain, Report 7: Psychiatric morbidity among homeless people*. HMSO: London
- Green H, McGinnity A, Meltzer H et al (2005) *Mental health of children and young people in Great Britain, 2004*. ONS.
- Jochelson J, Majrowski B (2006) *Clearing the Air. Debating Smoke-Free Policies in Psychiatric Units*. King's Fund.
- Kumari V, Postma P (2005) Nicotine use in schizophrenia: the self medication hypothesis. *Neuroscience and Biobehavioural Reviews*, 29, 1021-1034.
- Lasser K, Boyd JW, Woolhandler S et al. (2000), Smoking and mental illness: a population-based prevalence study. *JAMA*, 284(20), 2606-2610.
- Nahvi S, Richter K, Li X et al (2006) Cigarette smoking and interest in quitting in methadone maintenance patients. *Addict Behav*, 31, 2127-2134.
- NHS Information centre (2010) *Statistics on Smoking: England, 2010*  
[http://www.ic.nhs.uk/webfiles/publications/Health%20and%20Lifestyles/Statistics\\_on\\_Smoking\\_2010.pdf](http://www.ic.nhs.uk/webfiles/publications/Health%20and%20Lifestyles/Statistics_on_Smoking_2010.pdf) .
- Parks J, Svendsen D, Singer P, Fort ME (2006). *Morbidity and mortality in people with serious mental illness*. National Association of State Mental Health Programme Directors, 13th technical report.
- SANE (2007) *Smoking and mental illness: Costs, Access Economics for Sane Australia*  
[http://www.sane.org/images/stories/information/research/0903\\_info\\_smokesummary.pdf](http://www.sane.org/images/stories/information/research/0903_info_smokesummary.pdf).

Singleton, N., Meltzer, H., Gatward, R., *et al.* (1998) *Psychiatric morbidity among prisoners in England and Wales*. London: The Stationery Office.

Wade D, Harrigan S, Edwards J, *et al* (2006) Course of substance misuse and daily tobacco use in first-episode psychosis. *Schizophrenia Res.* 81(2-3), 145-50.

Williams JM, Ziedonis S (2004) Addressing tobacco among individuals with a mental illness or an addiction. *Addictive Behaviours*, 29, 1067-1083.

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## 2 Data from APMS 2007

### 2.1 The Adult Psychiatric Morbidity Survey 2007

There have been three Adult Psychiatric Morbidity Surveys (APMS) since 1993 (Jenkins et al, 2010). They have provided the primary source of National Statistics on the prevalence of both treated and untreated psychiatric disorders and their associations.

APMS 2007 was a stratified probability sample survey of 7,400 people aged 16 and over living in private households in England. The survey consisted of two phases. The first phase interview included the Clinical Interview Schedule revised (CIS-R) to assess common mental disorder (CMD) and screened for a number of other mental disorders and behaviours. The second phase interview included assessments with a subsample of phase one participants, conducted by clinically trained research interviewers, to diagnosis less common disorders such as psychosis. The survey was commissioned by the NHS Information Centre with funds from the Department of Health.

The data were weighted to take account of selection bias and patterns of non-response. The analyses presented in this report are all age-standardised, to assist with the comparison between groups. Only significant differences are comments on in the text.

The APMS 2007 dataset is lodged with the UK Data Archive.

**Table 2.1 APMS 2007 measurement of mental disorders and behaviours**

Condition	Diagnostic status	System	Assessment tool	Survey phase	Reference period
Generalised anxiety disorder (GAD)	Present to diagnostic criteria	ICD-10	CIS-R (Lewis <i>et al.</i> 1992)	One	Past week
Mixed anxiety and depressive disorder	Present to diagnostic criteria	ICD-10	CIS-R	One	Past week
Obsessive and compulsive disorder (OCD)	Present to diagnostic criteria	ICD-10	CIS-R	One	Past week
Depressive episode	Present to diagnostic criteria	ICD-10	CIS-R	One	Past week
Panic disorder	Present to diagnostic criteria	ICD-10	CIS-R	One	Past week
Phobia	Present to diagnostic criteria	ICD-10	CIS-R	One	Past week
Problem gambling	Present to diagnostic criteria (3 endorsed)	DSM-IV	-	One	Past year
Psychotic disorder	Present to diagnostic criteria	ICD-10	SCAN (WHO, 1999)	Two	Past year
Borderline personality disorder (BPD)	Present to diagnostic criteria	DSM-IV	SCID-II (First <i>et al.</i> 1997)	Two	Past year
Antisocial personality disorder (ASPD)	Present to diagnostic criteria	DSM-IV	SCID-II	Two	Past year
Alcohol dependency	Screen positive	-	AUDIT (Saunders <i>et al.</i> 1993) and SADQ-C (Stockwell <i>et al.</i> 1994)	One	Past six months
Drug dependency	Screen positive	-	Based on Diagnostic Interview Schedule (Malgady <i>et al.</i> 1992)	One	Past year
Post-traumatic stress disorder (PTSD)	Screen positive: endorsed six out of ten items.	DSM-IV	Trauma Screening Questionnaire (TSQ) (Brewin <i>et al.</i> 2002)	One	Past two weeks
Attention deficit hyperactivity disorder (ADHD)	Screen positive: endorsed all six items	DSM-IV	Adult Self-Report Scale-v1.1 (ASRS) (WHO, 2003)	One	Past six months
Eating disorder (ED)	Screen positive: endorsed two items and reported food impacted on life	-	SCOFF eating disorders questionnaire (Morgan <i>et al.</i> 1999)	One	Past year
Attempted suicide	Occurrence of behaviour	-	Self-completion	One	Past year

For a detailed description of the methodology, including more about how disorders were screened for or assessed, please refer to the main survey report available on the NHS IC website (<http://www.ic.nhs.uk/pubs/psychiatricmorbidity07>).

## 2.2 Smoking rates by mental disorder

The survey collected information on whether people had ever smoked a cigarette and whether they smoked at all nowadays. If they did, they were asked how many cigarettes they usually smoked a day on weekdays, and how many they usually smoked a day at the weekend. The average weekday number was multiplied by five, and the weekend average was multiplied by two. These figures were then totalled to provide an estimate of weekly cigarette consumption. A variable was derived that divided the sample into those who smoked between 0 and six cigarettes on average per week, and those who smoked seven

or more. The seven or more group is the category referred to in the following as ‘regular smokers’.

<b>Table 2.2 Smoking rate by mental disorder (age-standardised rates)</b>			
	Number of cases	Prevalence of disorder in the population	Proportion who are ‘regular smokers’
<b>Total sample</b>	7393		22%
<b>Type of mental disorder</b>			
CIS-R assessed disorders			
Depressive episode	255	3%	37%
Phobias	160	2%	37%
Generalised anxiety disorder	363	4%	36%
Obsessive compulsive disorder	86	1%	34%
Panic disorder	83	1%	31%
Mixed anxiety and depression	639	8%	29%
<b>Any common mental disorder (CIS-R)</b>	1275	16%	32%
Illicit drug dependence <sup>a</sup>	200	3%	69%
Alcohol problem (AUDIT 8+)	1600	24%	30%
Alcohol dependence	367	6%	46%
Probable psychosis	40	1%	40%
Problem gambling	41	1%	38% <sup>b</sup>
PTSD screen	215	3%	37%
ADHD screen	39	1%	31% <sup>d</sup>
Eating disorder screen	108	2%	20% <sup>d</sup>
Attempted suicide <sup>a</sup>	51	1%	57%
<b>Any mental disorder <sup>c</sup></b>	1690	23%	33%

<sup>a</sup> It was not possible to age-standardise for these categories.

<sup>b</sup> Despite the high rate of smoking identified among people with problem gambling, this was not found to be significantly higher than the prevalence of smoking in the general population. This is likely to be because of the small number of people identified in the survey sample with problem gambling. Other studies (e.g. Wardle *et al.*, 2007), have found smoking rates to be elevated in this group.

<sup>c</sup> The ‘any disorder’ variable was derived using the thresholds specified in Table 2.1. Alcohol dependence was used rather than the more inclusive ‘alcohol problem’ variable. Borderline personality disorder and antisocial personality disorder are included in this composite variable but are not shown separately due to the small number of cases identified in the survey sample (16 and 9 respectively).

<sup>d</sup> The smoking rate for these disorders was not significantly different from that of the general population as a whole.

## **2.3 Proportion of cigarette consumption by people with a mental disorder**

Taking account of the proportion of the population who met the criteria for any of the mental disorders and behaviours included in the survey, and of the average weekly number of cigarettes smoked by individuals (including those reporting less than seven cigarettes per week), the proportion of overall cigarette consumption accounted for by those with mental disorder was estimated. The precise number of cigarettes reported was used in the estimate, and respondent level weights were not factored in.

Using an inclusive definition of mental disorder, the 23% of the population meeting the criteria for any of the disorders assessed accounted for 42% of cigarettes consumed.

As highlighted previously, this is likely to be an underestimate owing to the exclusion of key sub-groups, such as those living in secure institutions or who are homeless or in temporary housing.

Focusing solely on the 16% of people meeting the diagnostic criteria for a CMD in the past week, the one person in six of the population with a CMD accounted for about one in three (31%) of cigarettes smoked.

## **2.4 Limitations**

The APMS 2007 sample excluded people not living in private households. People who live in temporary accommodation, on mental health wards, or who are in prison are likely to have higher rates of smoking than the rest of the general population, as well as higher rates of mental disorder. People who have severe mental health problems, including substance dependencies, may well be less able or less willing to participate in a social survey of this kind, even where they do live in a private household, and so be underrepresented in this survey sample.

## References

Brewin CR, Rose S, Andrews B *et al.* (2002) Brief screening instrument for post-traumatic stress disorder. *British Journal of Psychiatry* 181, 158-162.

First MB, Gibbon M, Spitzer RL *et al.* (1997) *Structured Clinical Interview for DSM - IV Axis II Personality Disorders*, American Psychiatric Press: Washington.

Jenkins R, Meltzer H, Bebbington P, *et al.* (2009). The British Mental Health Survey Programme: achievements and latest findings. *Social Psychiatry and Psychiatric Epidemiology*. 44, 899–904.

Lewis G, Pelosi AJ, Araya R, Dunn G. (1992) Measuring psychiatric disorder in the community; a standardised assessment for use by lay interviewers. *Psychological Medicine*, 22, 465-486.

Malgady RG, Rogler LH, Tryon WW (1992). Issues of validity in the Diagnostic Interview Schedule. *Journal of Psychiatric Research*, 26, 59-67.

Morgan JF, Reid F, Lacey JH (1999) The SCOFF questionnaire: assessment of a new screening tool for eating disorders. *BMJ* 319: 1467-1468.

Saunders JB, Aasland OG, Babor TF *et al.* (1993) Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption, part II. *Addiction*, 88, 791-804.

Stockwell T, Sitharan T, McGrath D, Lang (1994). The measurement of alcohol dependence and impaired control in community samples. *Addiction*, 89: 167–174.

Wardle H, Sproston K, Orford J, Erens B, Griffiths MD, Constantine R, & Pigott S. (2007). *The British Gambling Prevalence Survey 2007*. London: The Stationery Office.

World Health Organisation (2003) Adult ADHD Self-Report Scale-V1.1 (ASRS-V1.1) Screen. WHO Composite International Diagnostic Interview. World Health Organization.

World Health Organisation, Division of Mental Health (1999) *SCAN Schedules for Clinical Assessment in Neuropsychiatry Version 2.1*, World Health Organisation: Geneva.

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## 3 Conclusions and recommendations

The 23% of people in England with a mental disorder (inclusively defined) are both more likely to smoke, and more likely to smoke heavily, than the general population. They are responsible for an estimated 42% of all cigarette consumption and therefore experience higher levels of smoking related harm. Common mental disorder (as assessed by the CIS-R) occurs in 16% of the population who consume 31% of cigarettes in England. While the smoking rate is 33% among people with a common mental disorder, rates are even higher among people with illicit drug dependence, alcohol dependence, probable psychosis and who have attempted suicide in the past year.

People with a mental disorder have higher rates of physical illness and lower life expectancy than the rest of the general population, with the largest proportion of this health inequality being due to their greater levels of tobacco consumption. A similar proportion of overall consumption in the USA resulted in 45.5% of all smoking related deaths being experienced by those with a mental disorder.

Although people with poor mental health are less likely to be offered smoking cessation intervention, a review highlights that this group is just as motivated to stop smoking as the rest of the population (Siru *et al.*, 2008). Furthermore, interventions are the same for the general population as for people with mental health problems, although this group may require some additional monitoring (Campion *et al.*, 2008; Campion *et al.*, 2010).

Since people with a mental disorder (using the inclusive definition) constitute 23% of the population and are responsible for about 42% of overall cigarette consumption, they are important to target for smoking cessation interventions. This will reduce smoking prevalence across the population as a whole and reduce the associated disproportionate health inequality they experience.

## References

Campion J, Checinski K, Nurse J (2008). Review of smoking cessation treatments for people with mental illness. *Advances in Psychiatric Treatment*, 14, 208-216.

Campion J, Hewitt J, Shiers D, Taylor D (2010). Pharmacy guidance on smoking and mental health. Forum for Mental Health in Primary Care.  
[http://www.rcpsych.ac.uk/pdf/Pharmacy\\_%20guidance%20for%20smoking%20and%20mental%20health%20Feb%202010.pdf](http://www.rcpsych.ac.uk/pdf/Pharmacy_%20guidance%20for%20smoking%20and%20mental%20health%20Feb%202010.pdf)

Siru R, Hulse GK, Tait RJ (2009). Assessing motivation to quit smoking in people with mental illness: a review. *Addiction*, 104, 719-733.