The prevalence of smoking in people with mental health problems: evidence from UK data sources

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Sources of data

Data presented in this report are drawn from three sources: the Health Survey for England[1] (HSE) and the Adult Psychiatric Morbidity Survey[2] (APMS), both national surveys of the English population; and The Health Improvement Network[3] (THIN), a database containing electronic primary care medical records from approximately 500 general practices throughout the UK. Several indicators of mental ill-health are available in these datasets, which are summarised in Table 1:

Table 1: Description of data sources used in this report

	HSE	APMS	THIN
Year of survey	2010	2007	2009-10
Sample size (ages 16+)	8,369	7,393	2,493,085[a]
Geographical coverage	England	England	UK
Smoking prevalence reported by:			
- GHQ-12[4]	✓		
- CIS-R[5]		✓	
- self-reported longstanding mental ill-health	✓		
- self-reported any mental ill-health		✓	
- specific psychiatric diagnoses		✓	✓
- use/prescription of psychoactive medications	✓	✓	✓
- self-reported use of mental health services		✓	
- self-reported suicide attempt		✓	

[a]All patients aged 16+ registered with a GP from 1st July 2009 to 31st June 2010

In the HSE and APMS current smokers were defined as those who responded positively to the question 'do you smoke cigarettes at all nowadays?' In THIN, patients who smoked during the study period were identified as those with a relevant smoking-related Read code[6] recorded in their medical records during the study year. Patients were also classified as smokers if their smoking status was not recorded during the study period, but their last-recorded status prior to the start of the study indicated they were smoking. This method has been shown to provide smoking prevalence estimates comparable to national survey data[7]. Data are presented for the prevalence of each indicator of mental health in the general population and the prevalence of smoking in that group, each with a 95% confidence interval. HSE and APMS data have been weighted to account for survey design and non-response, and THIN data adjusted for the clustering of patients within general practices.

In relation to their use in this report, APMS and HSE data share three main limitations: first, their sample sizes are such that estimates of smoking prevalence within demographic or mental health subgroups are often based on small numbers and hence imprecise; second, the reliance on self-reported measures of smoking behaviour introduces the possibility of biased estimates of these outcomes; and finally, that as household surveys both the APMS and HSE exclude groups of people known to have higher rates of mental illness and a higher smoking prevalence, including people living in mental healthcare institutions, prisons, temporary housing and the homeless. Both surveys are therefore likely to underestimate the true population prevalence of mental illness and smoking. The major strength of the THIN dataset for this analysis is the large sample size and hence relatively high precision of estimates of smoking in relation to mental disorder. However, details of treatments or diagnoses delivered to psychiatric patients in inpatient or outpatient secondary care settings are not necessarily entered into the primary care medical record. As a result, analyses using THIN data may underestimate the number of patients with mental health conditions. Conversely, many

medications prescribed for mental disorders may also be used in other indications, such as anxiolytics used as sleeping tablets, or antidepressants for the relief of chronic pain, thus leading to potential overestimation of the proportion of patients receiving medication for mental disorder.

Results

In 2010, HSE data estimate the prevalence of smoking among all adults in England to be 20.1% (95% CI 18.8-21.3). In all three datasets smoking prevalence was significantly higher in those reporting indicators of mental disorder (Table 2).

Table 2: Prevalence of mental disorder and smoking prevalence in these groups

Measure	Data source	Prevalence of disorder (95% CI)	Smoking prevalence (95% CI)
Common mental disorder			
GHQ-12 (score 3+)	HSE 2010	19.3 (18.2-20.4)	27.3 (24.7-30.0)
CIS-R (score 12+)	APMS 2007	15.1 (14.1-16.0)	34.0 (31.0-37.1)
Other mental disorders			
Reports a longstanding mental illness	HSE 2010	4.1 (3.6-4.7)	37.4 (31.9-43.1)
Reports any mental health disorder	APMS 2007	17.8 (16.8-18.9)	33.0 (30.2-35.8)
Any mental disorder recorded in medical records in last year	THIN 09-10	4.26 (4.03-4.48)	30.3 (29.4-31.2)
Other indicators of mental ill-health			
Spoken to a GP in the past year about a mental, nervous or emotional problem	APMS 2007	11.0 (10.3-11.8)	33.2 (30.0-36.5)
Currently receiving counselling for a mental, nervous or emotional problem	APMS 2007	2.59 (2.22-3.02)	34.6 (27.6-42.3)
Made one or more suicide attempts in the last year	APMS 2007	0.65 (0.47-0.91)	57.4 (40.7-72.5)

As Figure 1 shows, data from earlier waves of the HSE demonstrate a sustained and progressive decline in smoking prevalence over the past two decades among respondents not reporting a longstanding mental health condition, whilst rates among those reporting these conditions have remained almost unchanged during this period. Although a drop to 37.4% was observed in the most recent, 2010, survey, further data are needed to confirm whether this is the start of a downward trend.

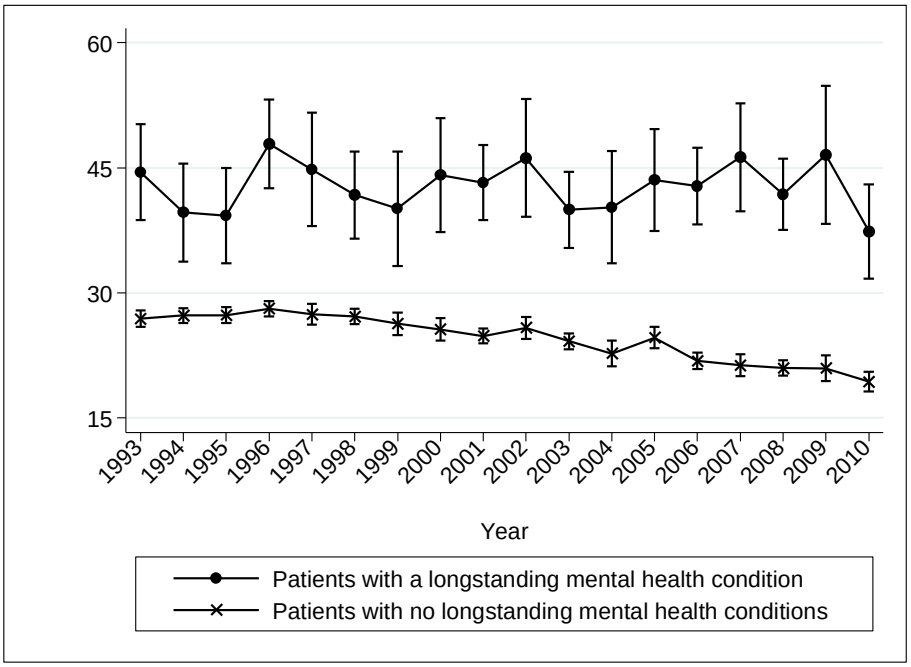

Figure 1: Changes in smoking prevalence between 1993 and 2010 in respondents with or without longstanding mental health conditions (with 95% CIs; HSE data)

Table 3 shows the prevalence of smoking amongst APMS survey respondents according to their psychiatric diagnosis. Smoking prevalence within specific diagnostic groups ranged from 25% (eating disorders) to 56% (probable psychosis).

Table 3: Smoking prevalence according to psychiatric diagnosis (APMS)

Diagnosis	**Prevalence of diagnosis (95% CI)**	**Smoking prevalence (95% CI)**
Depressive episode	2.98 (2.60-3.42)	39.8 (33.2-46.8)
Phobias	2.03 (1.71-2.41)	42.8 (34.0-50.1)
Generalised anxiety disorder	4.39 (3.92-4.91)	37.4 (31.9-43.4)
Obsessive compulsive disorder	1.11 (0.85-1.44)	40.2 (28.3-53.5)
Panic disorder	1.13 (0.89-1.43)	28.9 (19.6-40.4)
Mixed anxiety and depression	8.39 (7.66-9.18)	31.1 (27.1-35.3)
Probable psychosis	0.39 (0.25-0.60)	56.0 (33.3-76.3)
Post-traumatic stress disorder	2.89 (2.50-3.34)	40.4 (33.1-48.2)
Attention deficit hyperactivity disorder	0.57 (0.41-0.79)	39.1 (23.4-57.5)
Eating disorder	1.55 (1.26-1.92)	25.3 (17.3-35.4)

Table 4 shows the prevalence of smoking amongst survey respondents who report recent use of psychoactive medications and primary care patients with a prescription for these medications recorded in their electronic medical records over the course of one year. These figures again show a higher prevalence of smoking amongst people with this indicator of mental ill health than the smoking prevalence seen in the general population.

Table 4: Smoking prevalence according to medication use

	APMS (current use)		**HSE (use in last 7 days)**		**THIN (prescribed in 1 year)**	
	Prevalence (95% CI)	Smoking prevalence (95% CI)	Prevalence (95% CI)	Smoking prevalence (95% CI)	Prevalence (95% CI)	Smoking prevalence (95% CI)
ANY DRUG	5.65 (5.14-6.21)	35.0 (30.3-39.9)	5.21 (4.72-5.74)	27.0 (22.8-31.5)	14.3 (14.0-14.6)	27.1 (26.3-27.9)
Antipsychotic	0.47 (0.32-0.70)	59.2 (41.3-75.0)	0.36 (0.24-0.54)	44.7 (26.7-64.2)	1.11 (1.06-1.15)	34.4 (33.2-35.6)
Antimanic	0.14 (0.08-0.24)	8.86 (1.59-36.9)	0.17 (0.00-0.29)	49.5 (26.3-72.8)	0.14 (0.13-0.15)	30.2 (28.5-32.0)
Antidepressant	4.69 (4.23-5.21)	33.8 (28.9-39.1)	4.93 (4.45-5.47)	26.6 (22.3-31.2)	12.1 (11.8-12.4)	27.2 (26.4-28.0)
Anxiolytic	0.85 (0.67-1.07)	41.6 (30.0-54.3)	0.26 (0.18-0.39)	41.0 (22.3-62.8)	3.27 (3.14-3.40)	29.5 (28.5-30.5)

By combining the mid-2010 population estimates published by the Office for National Statistics[8] with the measures of the population prevalence of mental disorders and of smoking within diagnostic groups, estimates of the number of people with mental disorder in the UK, and the numbers that are smokers have been derived. Data are shown in Table 5, which demonstrates that, subject to the potential sources of error outlined above, there are approximately 2.6 million people in the UK with a common mental disorder who smoke (based on either the GHQ-12 or the CIS-R), and up to three million smokers with any mental disorder (based on data from the APMS). Smokers with mental disorder thus contribute significant numbers to the approximate total of ten million UK smokers[9].

Table 5: Estimates of the number of adults in the UK with mental disorders, and numbers of those who smoke

	Estimated number in UK population	Estimated number of smokers
HSE		
Reports current non-psychotic psychiatric morbidity (GHQ-12 3+)	9,761,026	2,663,784
Reports a longstanding mental health condition	2,081,879	777,790
Taken a psychoactive medication in the last 7 days	2,639,073	711,230
APMS		
Reports a common mental disorder (CIS-R ≥ 12)	7,648,754	2,600,576
Reports any mental disorder	9,016,412	2,975,416
Currently taking a psychoactive medication	2,861,951	1,001,683
THIN		
One or more mental disorders recorded in the last year	2,157,860	653,832
Prescribed psychoactive medication in the past year	7,243,522	1,962,994

In addition to their higher smoking prevalence, smokers with mental disorders are more heavily addicted to cigarettes than smokers in general. Among all smokers responding to the HSE, 5% were classified as heavily addicted according to the Heaviness of Smoking Index (HSI)[10], including 17% of those who reported a longstanding mental health condition, 14% of those currently taking a psychoactive medication, and 7% of those scoring three or more on the GHQ-12. Though people with mental disorders are more likely to be smokers and more likely to be heavily addicted to cigarettes than those without, data indicate that they are no less likely to want to quit smoking. When asked whether they would like to give up smoking altogether, 66% of all smokers in the HSE responded positively, as did 69% of smokers taking a psychoactive medication, 71% of smokers scoring three or more on the GHQ-12, and 61% of smokers reporting a longstanding mental health condition. However, smokers with mental disorders were more likely to report that they expected to find quitting difficult, and were less likely to expect to succeed, than patients without these disorders. When asked how easy or difficult they would find it to go without cigarettes for a whole day, 55% of all smokers completing the HSE reported they would find it fairly or very difficult. A significantly higher proportion, 79%, of smokers reporting a longstanding mental health condition believed they would find such abstinence fairly or very difficult. In addition, 72% of smokers taking a psychoactive medication at the time of the survey reported they would find quitting for a day difficult, as did 62% of smokers scoring three or more on the GHQ-12, though these proportions were not significantly different from that in all smokers.

Summary

- Smoking is substantially more prevalent among people with mental disorders compared to the general population
- Up to 3 million smokers in the UK, approximately one third of all UK smokers, also have evidence of mental disorder
- In contrast to the progressive decline in smoking prevalence over time in the general population, smoking among those with mental disorder has declined only minimally in nearly 20 years
- Smokers with mental disorders are more likely to be heavily addicted to smoking
- Smokers with mental disorders are just as likely to want to quit as those without, but are more likely to anticipate difficulty in doing so.

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