Mental Health Prescription Use in Scotland: Exploring relationships with macroeconomic and individual socioeconomic circumstances

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Antidepressant use increasing

BBC NEWS

Jump in antidepressant prescriptions in England
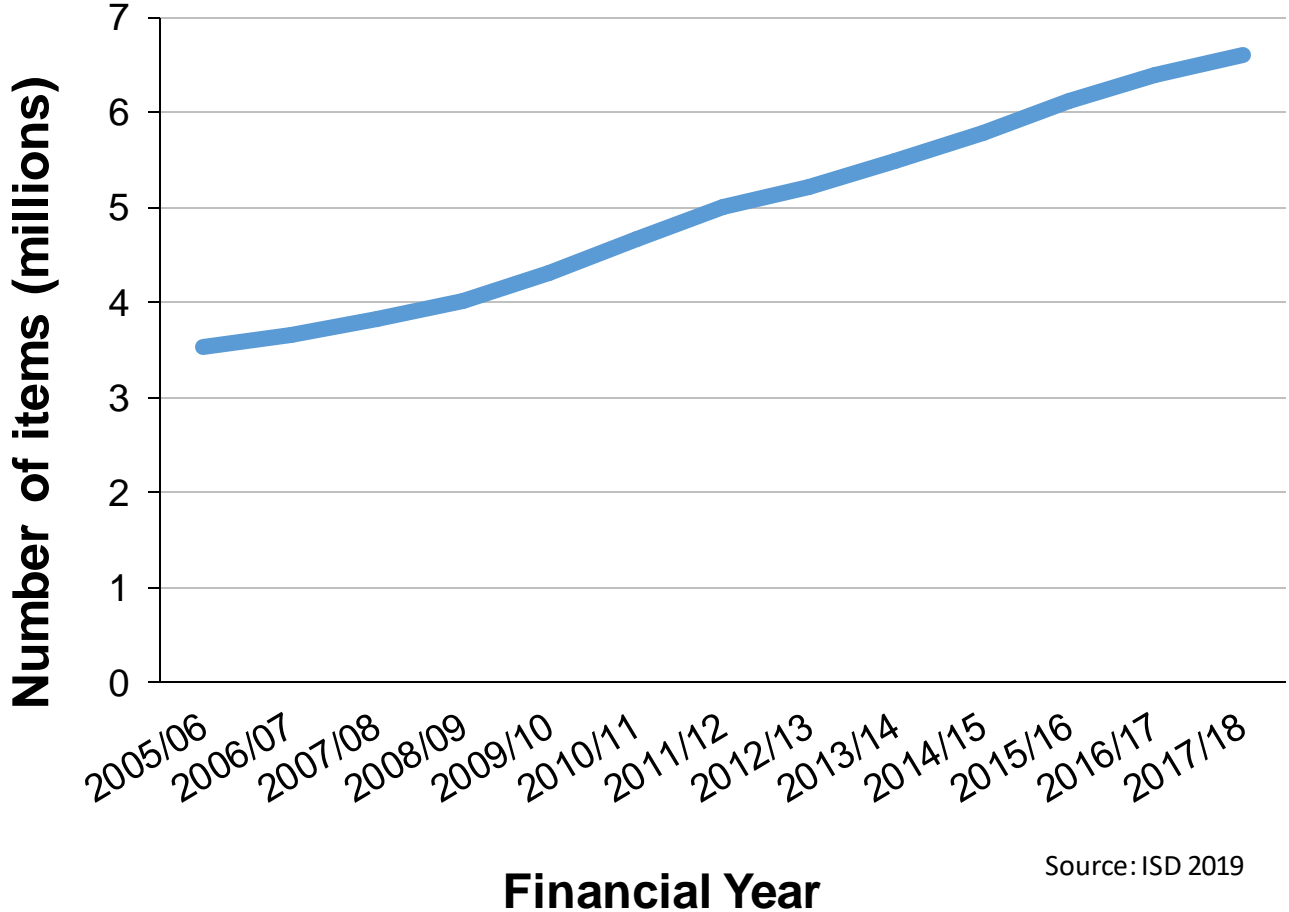
28 March 2019

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Antidepressant prescriptions have soared over the last decade

GETTY IMAGES

A total of 70.9 million prescriptions for antidepressants were dispensed in England in 2018.
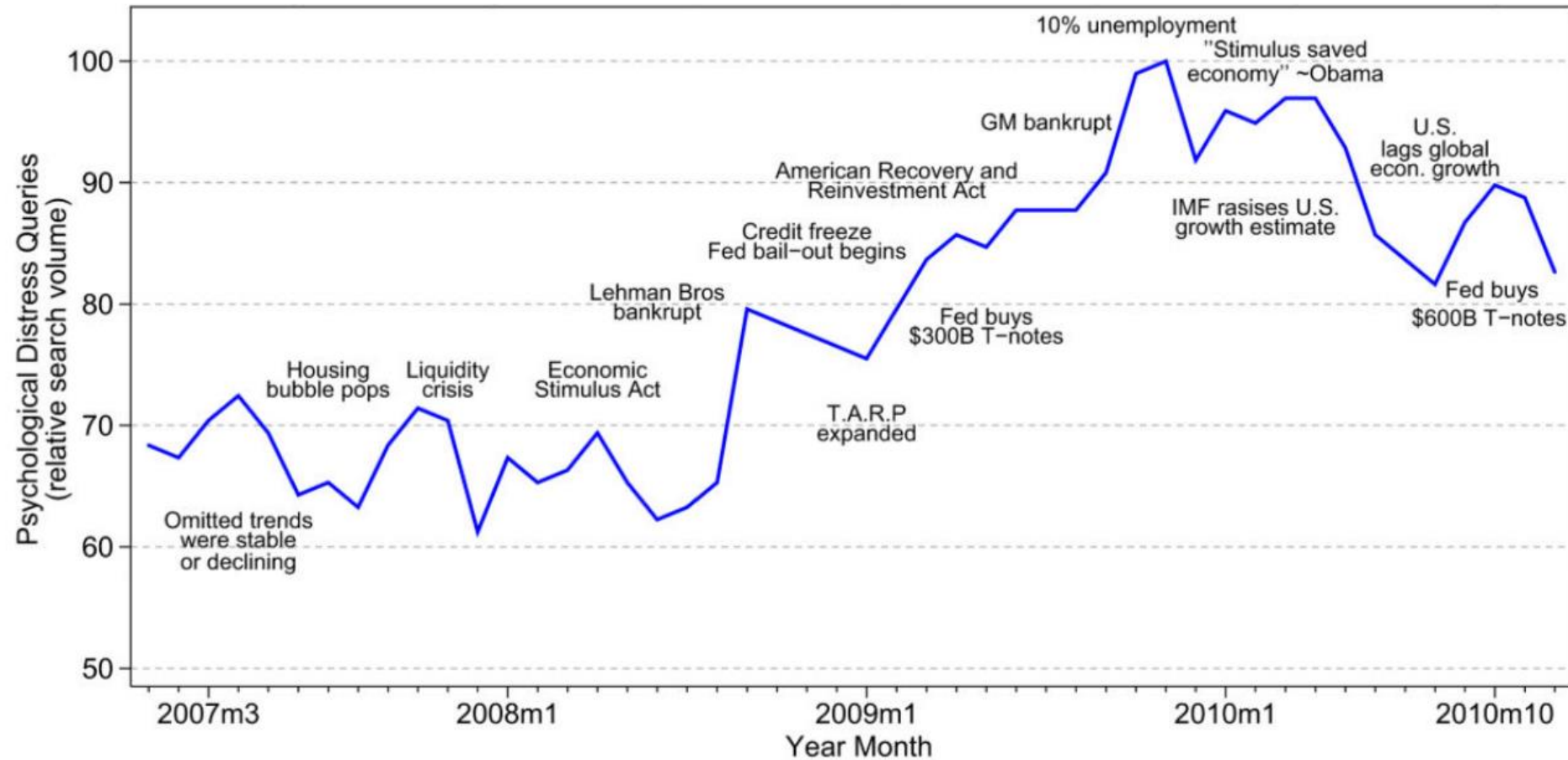
Source: BBC

And in Scotland...

Number of items (millions) vs **Financial Year**

Source: ISD 2019

Political economy approach (Bambra, 2019)

Source: Ayers et al., 2012

Monitoring Population Mental Health

- **Ecological**: Time trends in aggregated antidepressant use (Lockhart and Guthrie, 2011); fixed effects models of suicide rates, self-report and antidepressant use (Barr et al., 2016; Norstom et al., 2015)

- **Dichotomous**: Repeated cross-sectional analysis of self-reported mental illness (e.g. General Health Questionnaire) (Katikireddi et al., 2012; Moncho et al., 2018)

- … does not account for differences in individual trajectories

Aims

- Can we monitor population level change in mental health using antidepressants prescription data?

- How does it relate to other indicators of mental illness?

- Are there groups of people more at risk of becoming prescribed antidepressants?

Administrative Data

- Scottish Longitudinal Study

  - Longitudinal, based on 1991, 2001 and 2011 censuses

  - 5.3% population representative sample

  - Self reported mental illness (2011) and Inpatient Hospital services for mental health conditions (2001-2008)

  - Demographic and socioeconomic predictors of mental illness

Prescriptions Data

- NHS Scotland Prescribing Information

  - Monthly Jan 2009 – Dec 2014

  - Antidepressants (BNF: 4.3)

  - Exclusions of low dose amitriptyline

    and nortriptyline using free text

    dose instructions (McTaggart et al., 2018)

Sequence Analysis

- Steps using 'Traminer' R package (Gabadinho et al., 2011)

  1. Define sequence

  2. Visualise and descriptive statistics

  3. Calculate sequence dissimilarity

  4. Clustering (create clusters, assess quality of clusters, interpret them)

Scan me

Statistical Analysis

- Multilevel logistic

  regression with

  2011 local authority

  as random effect

- 'lme4' R package

Validity models

- [ ] Self reported mental illness

- [ ] Hospitalisations

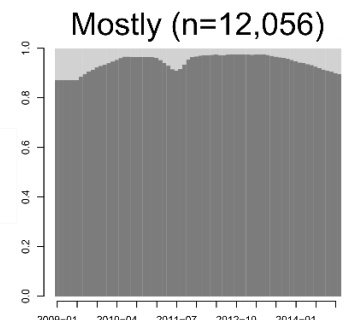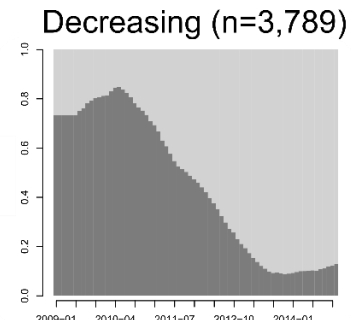- [ ] Any anxiolytics prescription
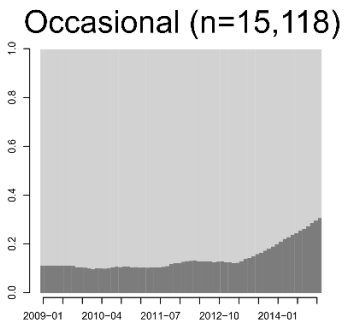
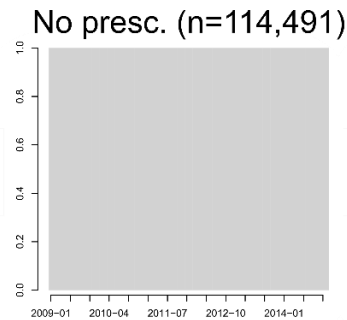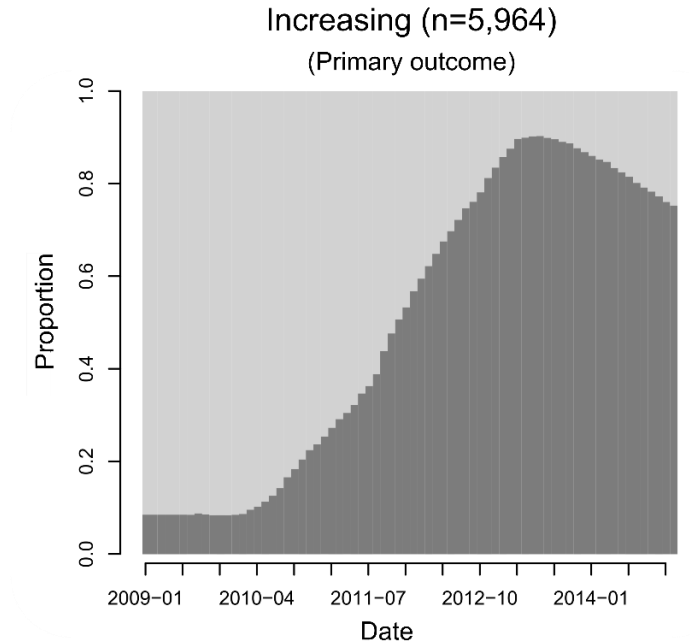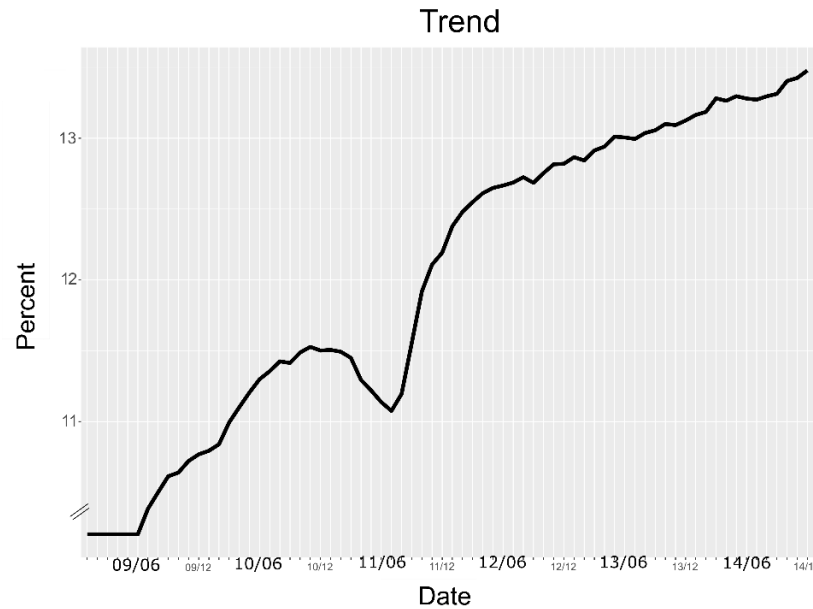- [ ] Any anti-psychotic prescription

'At risk' model

- [ ] Age, sex and ethnicity, marital status, living alone, employment status, social grade, area deprivation

Prescription Trajectory Groups

- Overall increasing trend

- 5 trajectory groups

  - 76% No

  - 10% Occasional

  - 3% Decreasing

  - 4% Increasing

  - 8% Mostly

Trend

Increasing (n=5,964)
(Primary outcome)

No presc. (n=114,491)   Occasional (n=15,118)   Decreasing (n=3,789)   Mostly (n=12,056)

Prescription in the last 6 months? ☐ No ■ Yes

Source: SLS

Results – validity

Variable	Reference	Antidepressant Prescription Group (Odds Ratios 95% CI)				
		No prescriptions	Occasional	Decreasing	Increasing	Mostly
Self-reported mental illness in 2011	No self-reported mental illness in 2011	0.09 (0.02, 0.15)	0.84 (0.76, 0.92)	3.83 (3.74, 3.93)	1.84 (1.75, 1.93)	12.97 (12.92, 13.03)
Hospital Admission 2001-2008	No Hospital Psychiatric Admission 2001-2008	0.20 (0.03, 0.36)	0.72 (0.48, 0.96)	1.79 (1.52, 1.41)	1.13 (0.86, 1.41)	6.04 (5.89, 6.20)
Anxiolytic Prescription	No anxiolytics prescription (2009-2014)	0.13 (0.08, 0.19)	1.91 (1.85, 1.97)	2.58 (2.48, 2.67)	3.28 (3.20, 3.35)	4.91 (4.85, 4.96)
Antipsychotics Prescription	No antipsychotic prescription (2009-2014)	0.15 (0.07, 0.23)	1.21 (1.11, 1.31)	2.12 (1.98, 2.26)	2.17 (2.05, 2.29)	6.16 (6.08, 6.24)

Adjusted for age, sex, ethnicity, Carstairs deprivation, employment status, social grade, living alone, and marital status

Results-'At risk' Source: SLS

Variable	Reference	Increasing
Sex (Female)	Male	1.80
		(1.75, 1.86)
Age (36:45)	26:35	0.99
		(0.90, 1.07)
Age (46:55)		0.85
		(0.76, 0.94)
Age (56:65)		0.61
		(0.50, 0.72)
Age (66:75)		0.55
		(0.40, 0.70)
Age (76:85)		0.62
		(0.45, 0.79)
Age (86+)		0.66
		(0.43, 0.89)
Ethnicity (Non-White)	White	0.47
		(0.16, 0.79)
Ethnicity (Missing)		1.07
		(0.92, 1.22)
Marital Status (married)	Single	1.02
		(0.94, 1.10)
Marital Status (separated)		1.43
		(1.30, 1.55)
Marital Status (divorced)		1.22
		(1.12, 1.32)
Marital Status (widowed)		0.98
		(0.85, 1.10)
Living Alone	Co-living	1.10
		(1.02, 1.18)
Social Grade (5 – dep.)	Grade 1	1.36
		(1.23, 1.50)
Employment (Retired)	Employed	1.23
		(1.12, 1.35)
Employment (Out of LF)		1.75
		(1.67, 1.82)
Employment (Unemployed)		1.54
		(1.40, 1.67)
Carstairs (decile 10 –dep.)	Decile 1	1.52
		(1.40, 1.65)

Main Findings

- Determined population distribution of pattern of prescription use over a

  six-year period

- Validated with indicators of mental illness

- Varying relationship with demographic, socioeconomic and lifestyle

- Highlighted the population at risk of becoming prescribed

  antidepressants for the period following the Great Recession
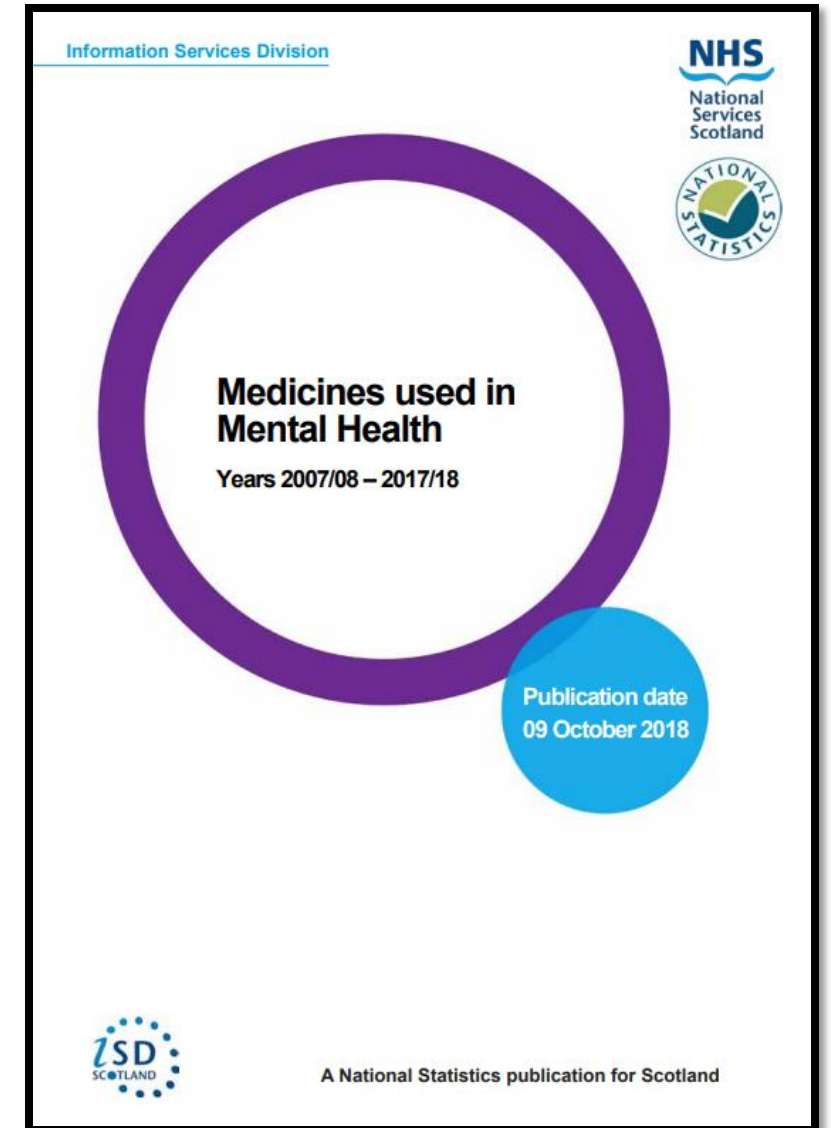
Becoming prescribed

- Had a weaker relationship with self-report mental illness than stopping antidepressant prescriptions, which shows that there may be a **lag** between starting medication and identifying oneself as having a mental illness

- No association exists between previous psychiatric hospital admissions and the becoming prescribed antidepressants, which may indicate that these patients have had a **new episode of depression**

Becoming prescribed

- Young, white, female participants, of low social grade, living in deprived neighbourhoods, living alone, being separated/divorced or out of the labour force, were more likely to have started antidepressants following the Recession

- This has led to discussions about how women have experienced a **'triple jeopardy'** of public sector service reductions, job losses and welfare reform (Craddock, 2017)

Future Monitoring

- Continuous monitoring required to understand

  political-economy effects

- Scottish Government's Mental Health Strategy

  2017-27

  - Improve mental health services, promote

    mental wellbeing and prevent mental illness

Future Research

- **Societal** changes

  - impact of recession (labour market trends, earnings, hours

    worked, GVA) and austerity (welfare, local gov. spending)

- **Neighbourhood** changes

  - modification of effect by greenspace and social cohesion?

- **Individual** changes

  - marriage to separation and divorce and how that can lead to

    loneliness associated with living alone

We acknowledge:

Thanks,
any questions?

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