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Employees' drug purchases before and after organizational downsizing: a natural experiment on the Norwegian working population (2004–2012) [1]

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1 *Supplementary tables*

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Table A. Medications included in each outcome-group. Defined daily doses (DDD) per 1000 inhabitants per day in the Norwegian population 2005-2010 and 2015. See the report "Drug consumption in Norway" published annually by the Norwegian Institute of Public Health (http://www.legemiddelforbruk.no/english/) for details on consumption on each specific drug.

ATC	ATC level name	DDDs/1000 inhabitants/day						
		2005	2006	2007	2008	2009	2010	2015
N05A	Antipsychotics	8.4	8.7	8.9	8.9	9.0	9.1	10.9
N05B	Anxiolytics	19.6	19.2	19.1	19.3	18.9	18.0	14.5
N05C	Hypnotics and sedatives	39.5	41.2	43.1	44.2	44.6	44.3	44.5
N06A	Antidepressants	48.4	49.0	51.0	51.7	51.6	52.8	56.5
A08A	Anti-obesity preparations, excl. diet products	2.6	2.3	2.7	3.0	3.1	0.9	0.4
A10A	Insulins and analogues	17.1	17.5	17.8	18.5	18.5	18.7	19.4
C01	Cardiac therapy	19.6	18.7	17.5	16.4	14.9	14.7	10.4
C02	Antihypertensives	4.5	4.6	4.5	4.4	4.4	4.2	3.9
C03	Diuretics	47.4	50.2	51.4	53.1	52.8	47.5	33.7
C07	Beta blocking agents	40.4	40.7	41.2	41.4	40.4	39.9	35.3
C08	Calcium channel blockers	48.9	50.3	52.6	54.7	55.2	55.8	57.1
C09	Agents acting on the renin-angiotensin system	106.2	112.3	117.9	124.6	128.7	133.1	143.8
C10	Lipid modifying agents	67.9	76.1	86.5	97.2	104.0	112.7	127.9
H03A	Thyroid therapy	19.0	19.6	20.4	21.2	21.5	22.3	24.3
M01A	Antiinflammatory and antirheumatic products, Nonsteroids	44.1	45.3	46.5	46.3	46.0	45.5	47.1
N02A	Opioids	19.6	19.9	20.0	20.5	20.6	17.7	19.1
N02B	Other analgesics and antipyretics	29.8	30.9	32.5	35.5	33.5	34.6	38.6

N05A	**Antipsychotics**
N05AA	Phenothiazines with aliphatic side chain
N05AA01	Chlorpromazine
N05AA02	Levomepromazine
N05AB	Phenothiazines with piperazine structure
N05AB01	Dixyrazine
N05AB02	Fluphenazine
N05AB03	Perphenazine
N05AB04	Prochlorperazine
N05AB06	Trifluoperazine
N05AB08	Thioproperazine
N05AC	Phenothiazines with piperidine structure
N05AC01	Periciazine
N05AC02	Thioridazine
N05AC04	Pipotiazine
N05AD	Butyrophenone derivatives
N05AD01	Haloperidol
N05AD03	Melperone
N05AD08	Droperidol

N05AE03	Sertindole
N05AE04	Ziprasidone
N05AE05	Lurasidone
N05AF	Thioxanthene derivatives
N05AF01	Flupentixol
N05AF03	Chlorprothixene
N05AF05	Zuclopenthixol
N05AG	Diphenylbutylpiperidine derivatives
N05AG02	Pimozide
N05AG03	Penfluridol
N05AH	Diazepines, oxazepines, thiazepines and oxepines
N05AH01	Loxapine
N05AH02	Clozapine
N05AH03	Olanzapine
N05AH04	Quetiapine
N05AH05	Asenapine
N05AL	Benzamides
N05AL01	Sulpiride
N05AL03	Tiapride
N05AL05	Amisulpride
N05AN	Lithium
N05AN01	Lithium
N05AX	Other antipsychotics
N05AX07	Prothipendyl
N05AX08	Risperidone
N05AX12	Aripiprazole
N05AX13	Paliperidone
N05B	**Anxiolytics**
N05BA	Benzodiazepine derivatives
N05BA01	Diazepam
N05BA02	Chlordiazepoxide
N05BA04	Oxazepam
N05BA05	Potassium clorazepate
N05BA06	Lorazepam
N05BA08	Bromazepam
N05BA09	Clobazam
N05BA12	Alprazolam
N05BB	Diphenylmethane derivatives
N05BB01	Hydroxyzine
N05BC	Carbamates
N05BC01	Meprobamate
N05BE	Azaspirodecanedione derivatives
N05BE01	Buspirone

N05C	**Hypnotics and sedatives**
N05CA	Barbiturates, plain
N05CA01	Pentobarbital
N05CA04	Barbital
N05CA06	Secobarbital
N05CB	Barbiturates, combinations
N05CB02	Barbiturates in combination with other drugs
N05CC	Aldehydes and derivatives
N05CC01	Chloral hydrate
N05CD	Benzodiazepine derivatives
N05CD01	Flurazepam
N05CD02	Nitrazepam
N05CD03	Flunitrazepam
N05CD04	Estazolam
N05CD05	Triazolam
N05CD08	Midazolam
N05CF	Benzodiazepine related drugs
N05CF01	Zopiclone
N05CF02	Zolpidem
N05CF03	Zaleplon
N05CH	Melatonin receptor agonists
N05CH01	Melatonin
N05CM	Other hypnotics and sedatives
N05CM02	Clomethiazole
N05CM05	Scopolamine
N05CM06	Propiomazine
N05CM09	Valerianae radix
N05CM11	Bromides
N05CM18	Dexmedetomidine
N06	Psychoanaleptics
N06A	**Antidepressants**
N06AA	Non selective monoamine reuptake inhibitors
N06AA01	Desipramine
N06AA02	Imipramine
N06AA04	Clomipramine
N06AA05	Opipramol
N06AA06	Trimipramine
N06AA07	Lofepramine
N06AA08	Dibenzepin
N06AA09	Amitriptyline
N06AA10	Nortriptyline
N06AA11	Protriptyline
N06AA12	Doxepin
N06AA21	Maprotiline

N06AB	Selective serotonin reuptake inhibitors
N06AB03	Fluoxetine
N06AB04	Citalopram
N06AB05	Paroxetine
N06AB06	Sertraline
N06AB08	Fluvoxamine
N06AB10	Escitalopram
N06AF	Monoamine oxidase inhibitors, non selective
N06AF01	Isocarboxazid
N06AF03	Phenelzine
N06AF04	Tranylcypromine
N06AG	Monoamine oxidase a inhibitors
N06AG02	Moclobemide
N06AX	Other antidepressants
N06AX01	Oxitriptan
N06AX02	Tryptophan
N06AX03	Mianserin
N06AX05	Trazodone
N06AX06	Nefazodone
N06AX09	Viloxazine
N06AX11	Mirtazapine
N06AX12	Bupropion
N06AX14	Tianeptine
N06AX16	Venlafaxine
N06AX18	Reboxetine
N06AX21	Duloxetine
N06AX22	Agomelatine
N06AX25	Hyperici herba
N06AX26	Vortioxetine
A08A	**Antiobesity preparations, excl. diet products**
A08AA	Centrally acting antiobesity products
A08AA01	Phentermine
A08AA02	Fenfluramine
A08AA04	Dexfenfluramine
A08AA05	Mazindol
A08AA10	Sibutramine
A08AA56	Ephedrine, combinations
A08AB	Peripherally acting antiobesity products
A08AB01	Orlistat
A08AX	Other antiobesity drugs
A08AX01	Rimonabant
A10A	**Insulins and analogues**

A10AB	Insulins and analogues for injection, fast acting
A10AB01	Insulin (human)
A10AB03	Insulin (pork)
A10AB04	Insulin lispro
A10AB05	Insulin aspart
A10AB06	Insulin glulisine
A10AC	Insulins and analogues for injection, intermediate acting
A10AC01	Insulin (human)
A10AC03	Insulin (pork)
A10AC30	Combinations
A10AD	Insulins and analogues for injection, intermediate or long combinded with fast acting
A10AD01	Insulin (human)
A10AD03	Insulin (pork)
A10AD04	Insulin lispro
A10AD05	Insulin aspart
A10AE	Insulins and analogues for injection, long acting
A10AE01	Insulin (human)
A10AE02	Insulin (beef)
A10AE04	Insulin glargine
A10AE05	Insulin detemir
A10AE06	Insulin degludec
C01	**Cardiac therapy**
C01A	Cardiac glycosides
C01AA	Digitalis glycosides
C01AA04	Digitoxin
C01AA05	Digoxin
C01AB	Scilla glycosides
C01AB01	Proscillaridin
C01B	Antiarrhythmics, class i and iii
C01BA	Antiarrhythmics, class ia
C01BA01	Quinidine
C01BA02	Procainamide
C01BA03	Disopyramide
C01BA05	Ajmaline
C01BB	Antiarrhythmics, class ib
C01BB01	Lidocaine
C01BB02	Mexiletine
C01BC	Antiarrhythmics, class ic
C01BC03	Propafenone
C01BC04	Flecainide

C01BD	Antiarrhythmics, class iii
C01BD01	Amiodarone
C01BD02	Bretylium tosilate
C01BD05	Ibutilide
C01BD07	Dronedarone
C01BG	Other antiarrhythmics, class i and iii
C01BG11	Vernakalant
C01C	Cardiac stimulants excl. cardiac glycosides
C01CA	Adrenergic and dopaminergic agents
C01CA01	Etilefrine
C01CA02	Isoprenaline
C01CA03	Norepinephrine
C01CA04	Dopamine
C01CA06	Phenylephrine
C01CA07	Dobutamine
C01CA09	Metaraminol
C01CA10	Methoxamine
C01CA13	Prenalterol
C01CA14	Dopexamine
C01CA17	Midodrine
C01CA24	Epinephrine
C01CA26	Ephedrine
C01CE	Phosphodiesterase inhibitors
C01CE01	Amrinone
C01CE02	Milrinone
C01CX	Other cardiac stimulants
C01CX08	Levosimendan
C01D	Vasodilators used in cardiac diseases
C01DA	Organic nitrates
C01DA02	Glyceryl trinitrate
C01DA08	Isosorbide dinitrate
C01DA14	Isosorbide mononitrate
C01DX	Other vasodilators used in cardiac diseases
C01DX12	Molsidomine
C01DX16	Nicorandil
C01E	Other cardiac preparations
C01EA	Prostaglandins
C01EA01	Alprostadil
C01EB	Other cardiac preparations
C01EB03	Indometacin
C01EB09	Ubidecarenone
C01EB10	Adenosine
C01EB15	Trimetazidine
C01EB16	Ibuprofen

C01EB17	Ivabradine
C01EB18	Ranolazine
C01EB21	Regadenoson
C02	**Antihypertensives**
C02A	Antiadrenergic agents, centrally acting
C02AB	Methyldopa
C02AB01	Methyldopa (levorotatory)
C02AC	Imidazoline receptor agonists
C02AC01	Clonidine
C02AC05	Moxonidine
C02C	Antiadrenergic agents, peripherally acting
C02CA	Alpha adrenoreceptor antagonists
C02CA01	Prazosin
C02CA04	Doxazosin
C02CC	Guanidine derivatives
C02CC02	Guanethidine
C02D	Arteriolar smooth muscle, agents acting on
C02DB	Hydrazinophthalazine derivatives
C02DB01	Dihydralazine
C02DB02	Hydralazine
C02DC	Pyrimidine derivatives
C02DC01	Minoxidil
C02DD	Nitroferricyanide derivatives
C02DD01	Nitroprusside
C02K	Other antihypertensives
C02KD	Serotonin antagonists
C02KD01	Ketanserin
C02KX	Antihypertensives for pulmonary arterial hypertension
C02KX01	Bosentan
C02KX02	Ambrisentan
C02KX03	Sitaxentan
C02KX04	Macitentan
C02KX05	Riociguat
C03	**Diuretics**
C03A	Low ceiling diuretics, thiazides
C03AA	Thiazides, plain
C03AA01	Bendroflumethiazide
C03AA03	Hydrochlorothiazide
C03AA06	Trichlormethiazide
C03AB	Thiazides and potassium in combination
C03AB01	Bendroflumethiazide and potassium
C03B	Low ceiling diuretics, excl. Thiazides
C03BA	Sulfonamides, plain

C03BA04	Chlortalidone
C03BA05	Mefruside
C03BA08	Metolazone
C03C	High ceiling diuretics
C03CA	Sulfonamides, plain
C03CA01	Furosemide
C03CA02	Bumetanide
C03CA04	Torasemide
C03CB	Sulfonamides and potassium in combination
C03CB02	Bumetanide and potassium
C03CC	Aryloxyacetic acid derivatives
C03CC01	Etacrynic acid
C03D	Potassium sparing agents
C03DA	Aldosterone antagonists
C03DA01	Spironolactone
C03DA02	Potassium canrenoate
C03DA04	Eplerenone
C03DB	Other potassium sparing agents
C03DB01	Amiloride
C03DB02	Triamterene
C03E	Diuretics and potassium sparing agents in combination
C03EA	Low ceiling diuretics and potassium
C03EA01	Hydrochlorothiazide and potassium sparing agents
C03X	Other diuretics
C03XA	Vasopressin antagonists
C03XA01	Tolvaptan
C07	**Beta blocking agents**
C07A	Beta blocking agents
C07AA	Beta blocking agents, non selective
C07AA01	Alprenolol
C07AA02	Oxprenolol
C07AA03	Pindolol
C07AA05	Propranolol
C07AA06	Timolol
C07AA07	Sotalol
C07AA12	Nadolol
C07AB	Beta blocking agents, selective
C07AB02	Metoprolol
C07AB03	Atenolol
C07AB07	Bisoprolol
C07AB09	Esmolol
C07AB12	Nebivolol

C07AG	Alpha and beta blocking agents
C07AG01	Labetalol
C07AG02	Carvedilol
C07B	Beta blocking agents and thiazides
C07BB	Beta blocking agents, selective, and thiazides
C07BB07	Bisoprolol and thiazides
C07BB12	Nebivolol and thiazides
C08	**Calcium channel blockers**
C08C	Selective calcium channel blockers with mainly vascular effects
C08CA	Dihydropyridine derivatives
C08CA01	Amlodipine
C08CA02	Felodipine
C08CA03	Isradipine
C08CA05	Nifedipine
C08CA06	Nimodipine
C08CA13	Lercanidipine
C08CX	Other selective calcium channel blockers with mainly vascular effects
C08CX01	Mibefradil
C08D	Selective calcium channel blockers with direct cardiac effects
C08DA	Phenylalkylamine derivatives
C08DA01	Verapamil
C08DB	Benzothiazepine derivatives
C08DB01	Diltiazem
C09	**Agents acting on the renin angiotensin system**
C09A	Ace inhibitors, plain
C09AA	Ace inhibitors, plain
C09AA01	Captopril
C09AA02	Enalapril
C09AA03	Lisinopril
C09AA04	Perindopril
C09AA05	Ramipril
C09AA09	Fosinopril
C09AA10	Trandolapril
C09AA15	Zofenopril
C09B	Ace inhibitors, combinations
C09BA	Ace inhibitors and diuretics
C09BA02	Enalapril and diuretics
C09BA03	Lisinopril and diuretics
C09BA15	Zofenopril and diuretics
C09BB	Ace inhibitors and calcium channel blockers
C09BB02	Enalapril and lercanidipine

C09C	Angiotensin ii antagonists, plain
C09CA	Angiotensin ii antagonists, plain
C09CA01	Losartan
C09CA02	Eprosartan
C09CA03	Valsartan
C09CA04	Irbesartan
C09CA06	Candesartan
C09CA07	Telmisartan
C09CA08	Olmesartan medoxomil
C09D	Angiotensin ii antagonists, combinations
C09DA	Angiotensin ii antagonists and diuretics
C09DA01	Losartan and diuretics
C09DA02	Eprosartan and diuretics
C09DA03	Valsartan and diuretics
C09DA04	Irbesartan and diuretics
C09DA06	Candesartan and diuretics
C09DA07	Telmisartan and diuretics
C09DA08	Olmesartan medoxomil and diuretics
C09DB	Angiotensin ii antagonists and calcium channel blockers
C09DB01	Valsartan and amlodipine
C09DB02	Olmesartan medoxomil and amlodipine
C09DX	Angiotensin ii antagonists, other combinations
C09DX01	Valsartan, amlodipine and hydrochlorothiazide
C09DX03	Olmesartan medoxomil, amlodipine and hydrochlorothiazide
C09X	Other agents acting on the renin angiotensin system
C09XA	Renin inhibitors
C09XA02	Aliskiren
C09XA52	Aliskiren and hydrochlorothiazide
C10	**Lipid modifying agents**
C10A	Lipid modifying agents, plain
C10AA	Hmg coa reductase inhibitors
C10AA01	Simvastatin
C10AA02	Lovastatin
C10AA03	Pravastatin
C10AA04	Fluvastatin
C10AA05	Atorvastatin
C10AA06	Cerivastatin
C10AA07	Rosuvastatin
C10AA08	Pitavastatin
C10AB	Fibrates
C10AB01	Clofibrate
C10AB02	Bezafibrate

C10AB04	Gemfibrozil
C10AB05	Fenofibrate
C10AC	Bile acid sequestrants
C10AC01	Colestyramine
C10AC02	Colestipol
C10AC04	Colesevelam
C10AD	Nicotinic acid and derivatives
C10AD01	Niceritrol
C10AD02	Nicotinic acid
C10AD06	Acipimox
C10AD52	Nicotinic acid, combinations
C10AX	Other lipid modifying agents
C10AX02	Probucol
C10AX06	Omega 3 triglycerides incl. other esters and acids
C10AX09	Ezetimibe
C10B	Lipid modifying agents, combinations
C10BA	Hmg coa reductase inhibitors in combination with other lipid modifying agents
C10BA02	Simvastatin and ezetimibe
C10BA05	Atorvastatin and ezetimibe
H03A	**Thyroid preparations**
H03AA	Thyroid hormones
H03AA01	Levothyroxine sodium
H03AA02	Liothyronine sodium
H03AA03	Combinations of levothyroxine and liothyronine
H03AA04	Tiratricol
H03AA05	Thyroid gland preparations
M01A	**Antiinflammatory and antirheumatic products, non steroids**
M01AA	Butylpyrazolidines
M01AA01	Phenylbutazone
M01AB	Acetic acid derivatives and related substances
M01AB01	Indometacin
M01AB02	Sulindac
M01AB05	Diclofenac
M01AB15	Ketorolac
M01AB16	Aceclofenac
M01AB55	Diclofenac, combinations
M01AC	Oxicams
M01AC01	Piroxicam
M01AC06	Meloxicam
M01AE	Propionic acid derivatives
M01AE01	Ibuprofen

M01AE02	Naproxen
M01AE03	Ketoprofen
M01AE14	Dexibuprofen
M01AE17	Dexketoprofen
M01AE52	Naproxen and esomeprazole
M01AG	Fenamates
M01AG02	Tolfenamic acid
M01AH	Coxibs
M01AH01	Celecoxib
M01AH02	Rofecoxib
M01AH03	Valdecoxib
M01AH04	Parecoxib
M01AH05	Etoricoxib
M01AH06	Lumiracoxib
M01AX	Other antiinflammatory and antirheumatic agents, non steroids
M01AX01	Nabumetone
M01AX05	Glucosamine
M02A	**Topical products for joint and muscular pain**
M02AA	Antiinflammatory preparations, non steroids for topical use
M02AA07	Piroxicam
M02AA10	Ketoprofen
M02AA13	Ibuprofen
M02AA15	Diclofenac
M02AB	Capsaicin and similar agents
M02AB01	Capsaicin
M02AC	Preparations with salicylic acid derivatives
M02AX	Other topical products for joint and muscular pain
M02AX10	Various

Psychotropic drug purchase stratified by sex, age and educational level

To reduce the number of figures in the paper, we present the stratified analyses on psychotropic drug purchase in S-Figure 1 to S-Figure 3 below. The results are commented upon in the paper.

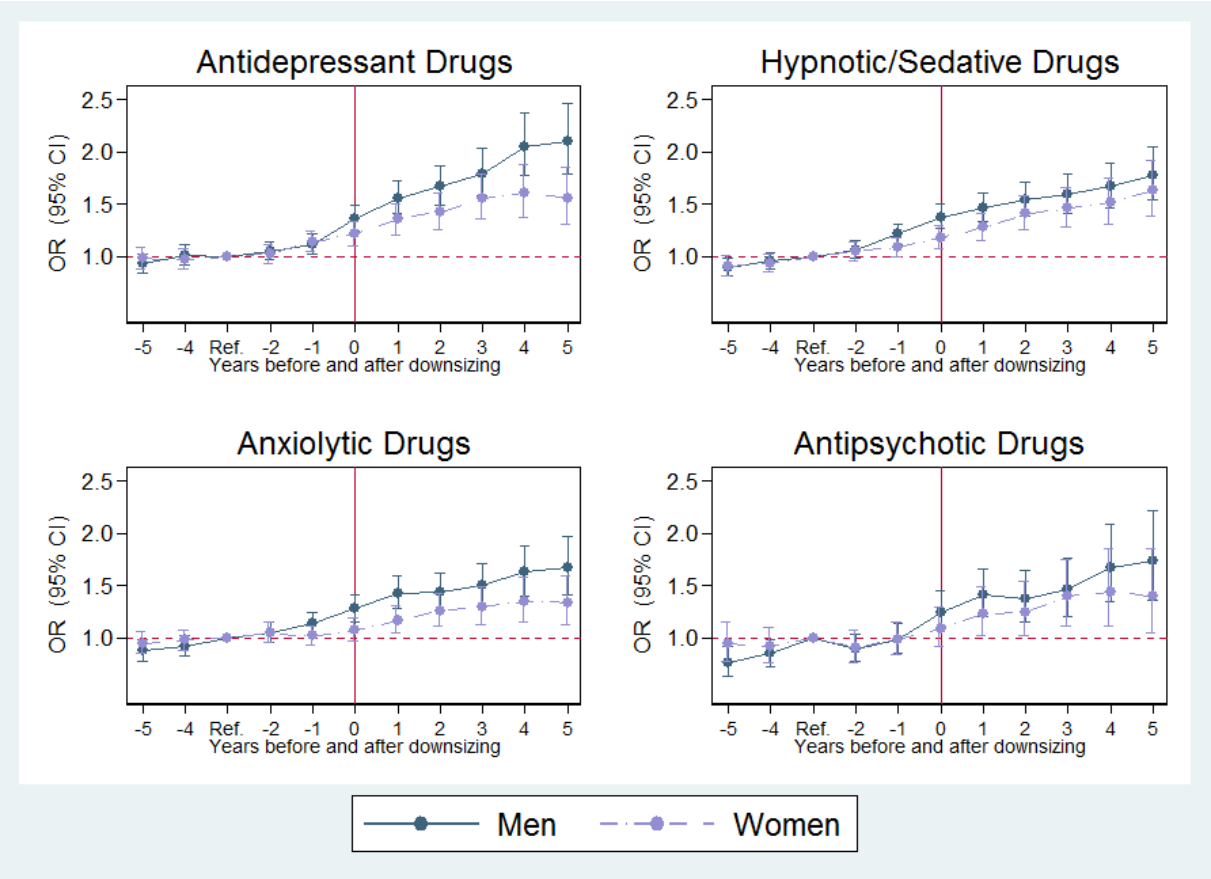

Figure A. Odds ratios (OR) with 95% Confidence Intervals (CI) of purchasing antidepressants, hypnotic/sedative drugs, anxiolytic drugs and antipsychotic drugs, respectively, in the years before and after exposure of plant downsizing (year 0, red line) with year -3 as the reference year. Dashed line indicates OR =1. Observation period: 1st 2004 to December 31st 2012. Stratified by sex.

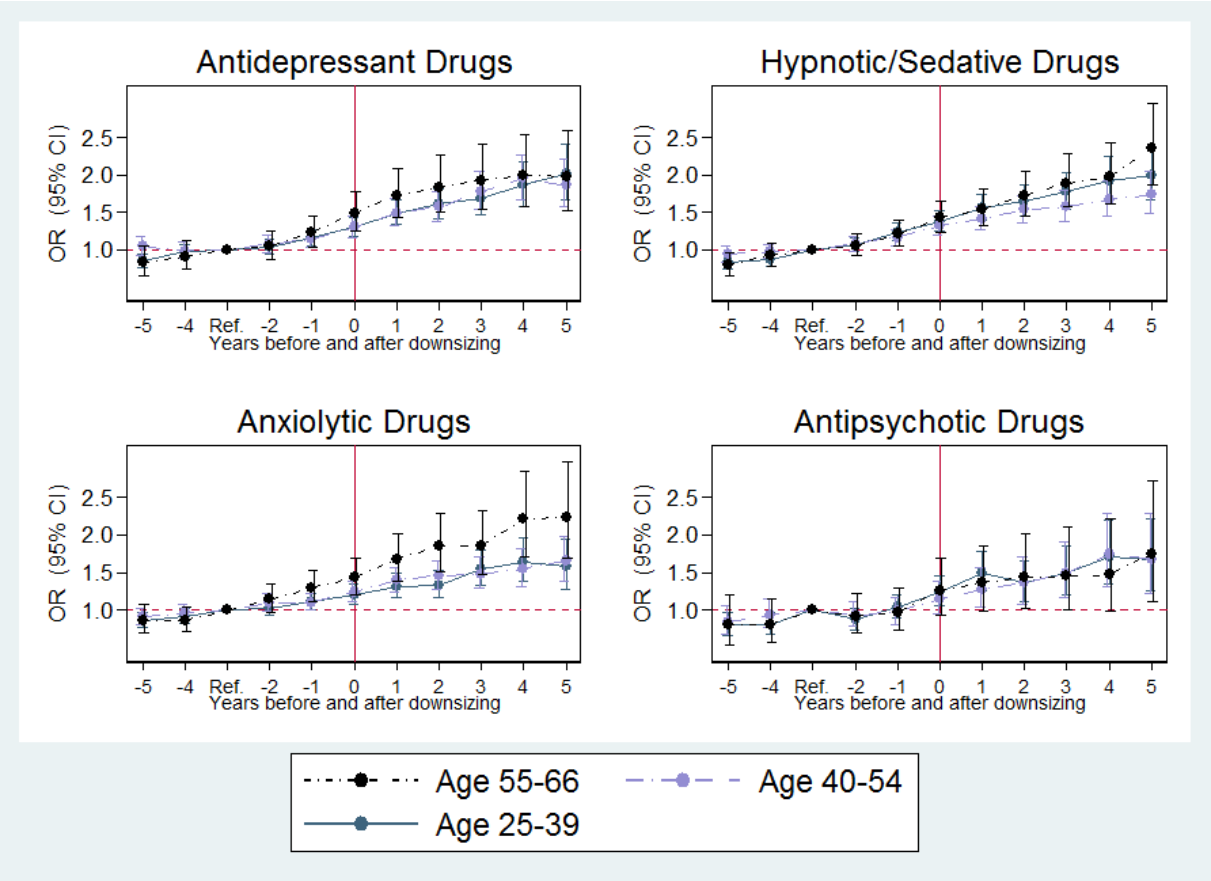

Figure B. Odds ratios (OR) with 95% Confidence Intervals (CI) of purchasing antidepressants, hypnotic/sedative drugs, anxiolytic drugs and antipsychotic drugs, respectively, in the years before and after exposure of plant downsizing (year 0, red line) with year -3 as the reference year. Dashed line indicates OR =1. Observation period: 1st 2004 to December 31st 2012. Stratified by age-groups.

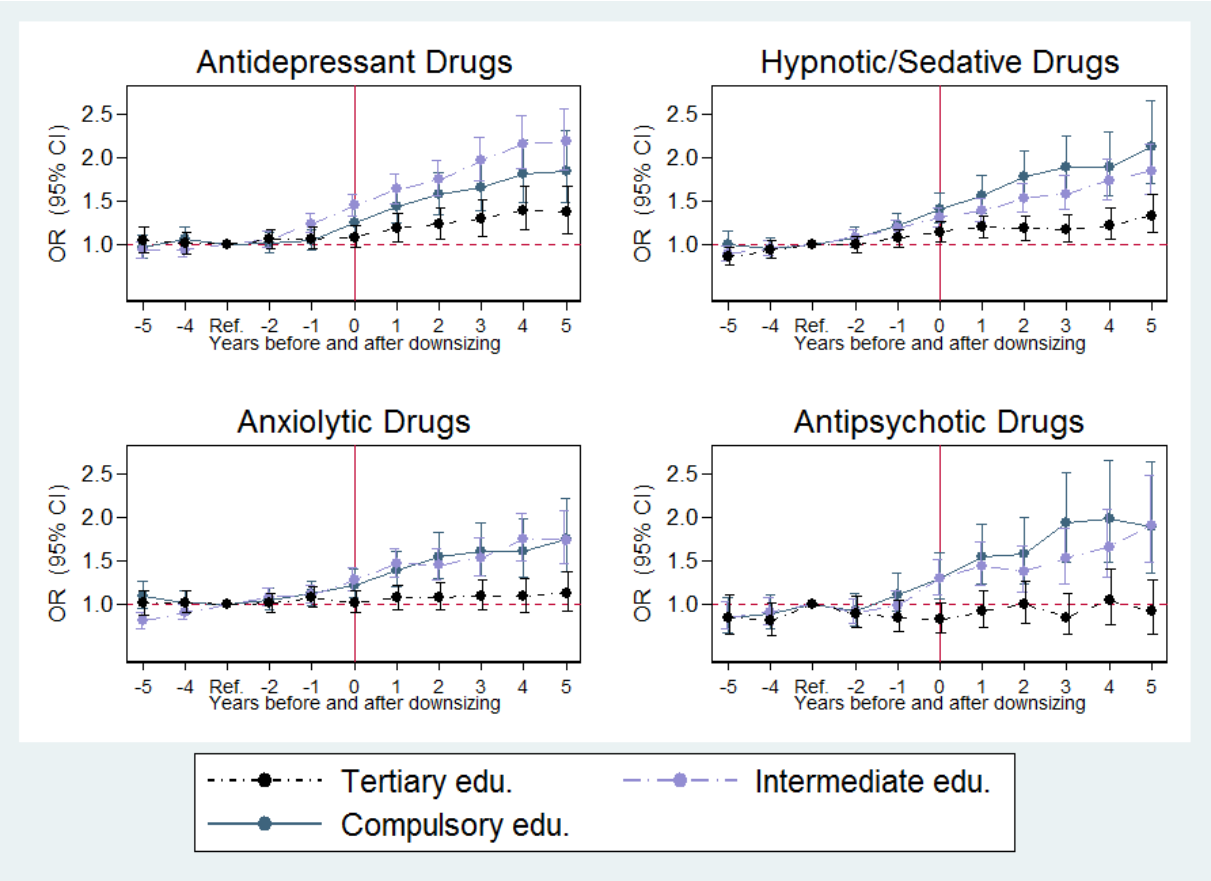

Figure C. Odds ratios (OR) with 95% Confidence Intervals (CI) of purchasing antidepressants, hypnotic/sedative drugs, anxiolytic drugs and antipsychotic drugs, respectively, in the years before and after exposure of plant downsizing (year 0, red line) with year -3 as the reference year. Dashed line indicates OR =1. Observation period: 1st 2004 to December 31st 2012. Stratified by educational level.

Somatic and pain drug purchase stratified by sex

In the figure below we present stratified analyses (by sex) on drugs for somatic conditions and pain. The analyses were adjusted for age, educational level and time-trends. The results are not very different between the sexes for most of the medications studied, but anti-diabetic drugs and cardiovascular drugs have higher odds ratios in men than women, while thyroid drugs have higher odds ratios in women.

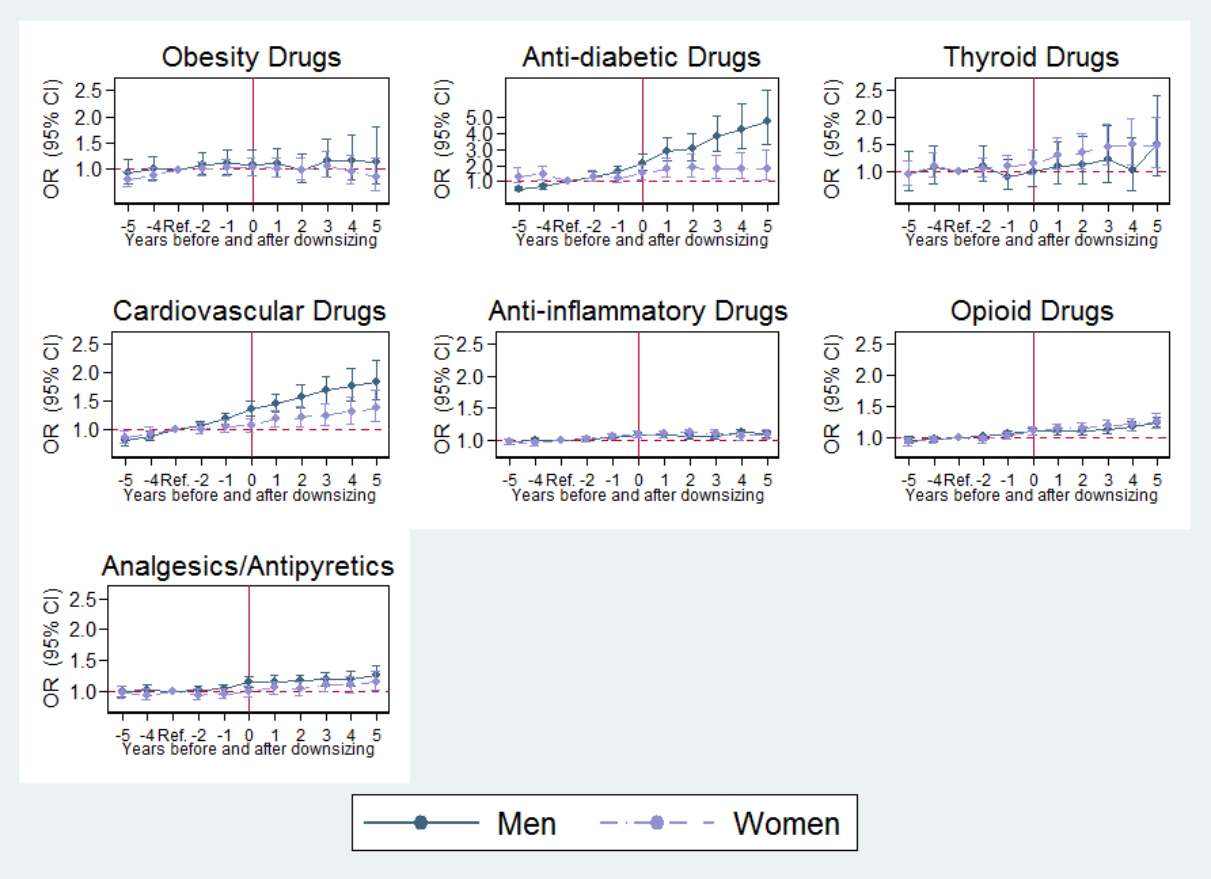

Figure D. Odds ratio with 95% confidence intervals of purchasing drugs for somatic conditions and pain in the years before and after exposure of major downsizing (year 0, red line) with year -3 as the reference year. Dashed line indicates OR=1. Note that anti-diabetic drugs have a different scale than the other drugs. Observation period: 1st 2004 to December 31st 2012. Adjusted for age, education and time-trends.

Supplemental analysis – taking previous health status into account

Following a Swedish article on downsizing and antidepressant purchases[1], we ran supplemental analyses taking into account whether an individual had had previous sickness absence (medical certificate) and/or psychotropic drug purchases in 2004 or 2005. We identified employees who had had ≥30 days of sickness absence or any psychotropic purchase in 2004 or 2005. Further, we excluded those exposed to major downsizing between 2004 and 2005, and ran the main analysis with an observation period from 2006 to 2012. 97 860 individuals were eligible for analysis (2006-2012) and had no previous sick leave spells or psychotropic medication (in 2004/2005) by the time of downsizing (year 0).

The trends were more or less the same as in the main analysis. Compared to the main analysis, the odds ratios in the supplementary analysis were higher for antidepressants, while hypnotic/sedative-drugs, anxiolytic drugs gave quite similar or at bit weaker results as the main analysis.

[1] Magnusson Hanson LL, Westerlund H, Chungkham HS, *et al.* Purchases of Prescription Antidepressants in the Swedish Population in Relation to Major Workplace Downsizing. *Epidemiology* 2016;27:257-64

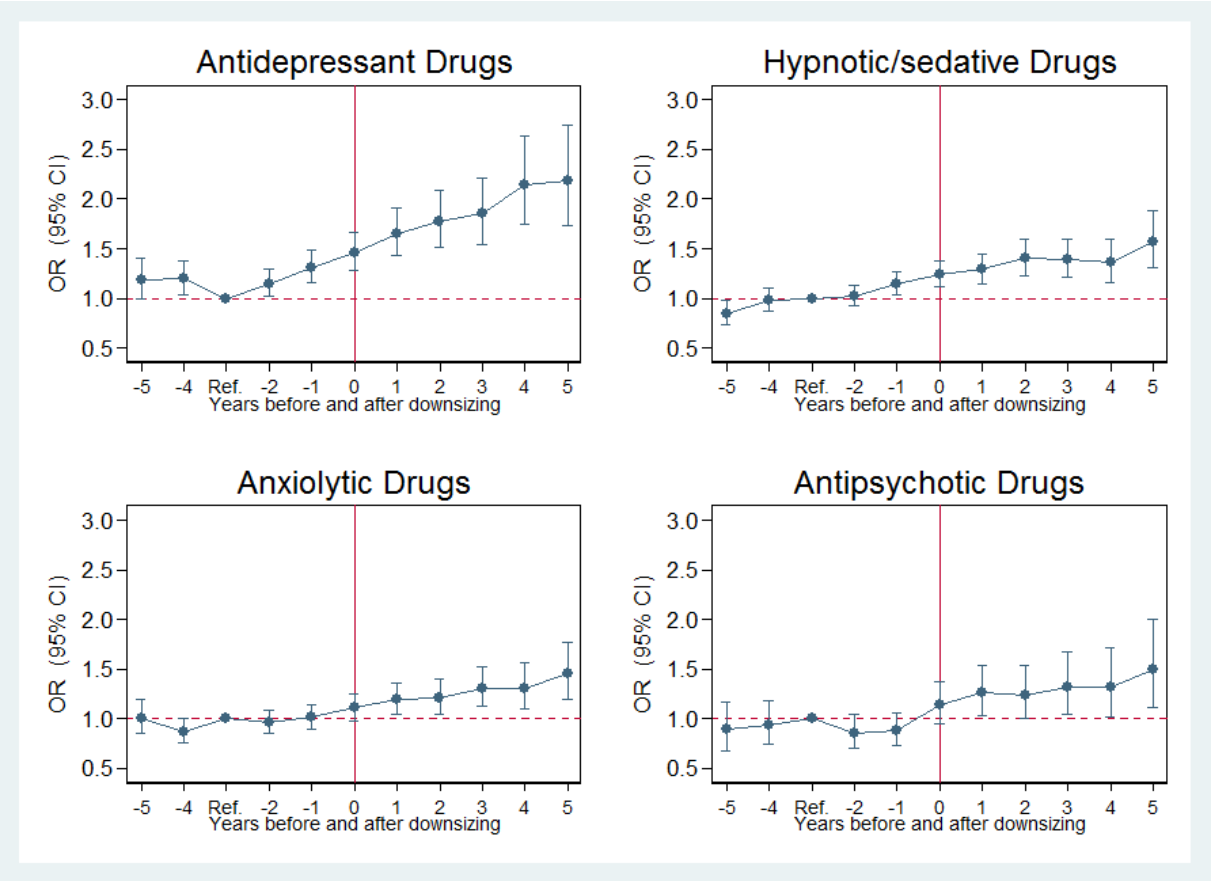

Figure E. Odds ratios (OR) with 95% Confidence Intervals (CI) of purchasing antidepressants, hypnotic/sedative drugs, anxiolytic drugs and antipsychotic drugs, respectively, in the years before and after exposure of plant downsizing (year 0, red line) with year -3 as the reference year. Dashed line indicates OR = 1. Observation period: 1st 2006 to December 31st 2012. Individuals with no previous health problems measured as sick leave (≥30 days) and/or purchase of any psychotropic drug in 2004 or 2005. Adjusted for age, sex, education and time-trends.

Sensitivity analysis – ≥50% workforce reduction

While the main analysis used a definition of downsizing as ≥25% workforce reduction between years (see estimates in table above, Model 1), we wanted to investigate what happened if we changed this exposure cut-off to ≥50% workforce reduction. The definition and cut-off of downsizing and plant closure vary between studies, and in the sensitivity analysis we chose to follow a definition of plant closure from Rege et al. (2009)[2], which can also be found in Martikainen et al. (2007)[3]. The results are presented in the figure below, illustrating the difference between ≥25% downsizing and ≥50% downsizing estimates, with the reference time point set at year -3. The results are commented upon in the article. There seems to be a weaker effect of downsizing when the company reduce their workforce with a substantial amount of employees.

[2] Rege M, Telle K, Votruba M. The Effect of Plant Downsizing on Disability Pension Utilization *Journal of the European Economic Association* 2009;7:754-85.

[3] Martikainen P, Maki N, Jantti M. The effects of unemployment on mortality following workplace downsizing and workplace closure: a register-based follow-up study of Finnish men and women during economic boom and recession. *Am J Epidemiol* 2007;165:1070-5.

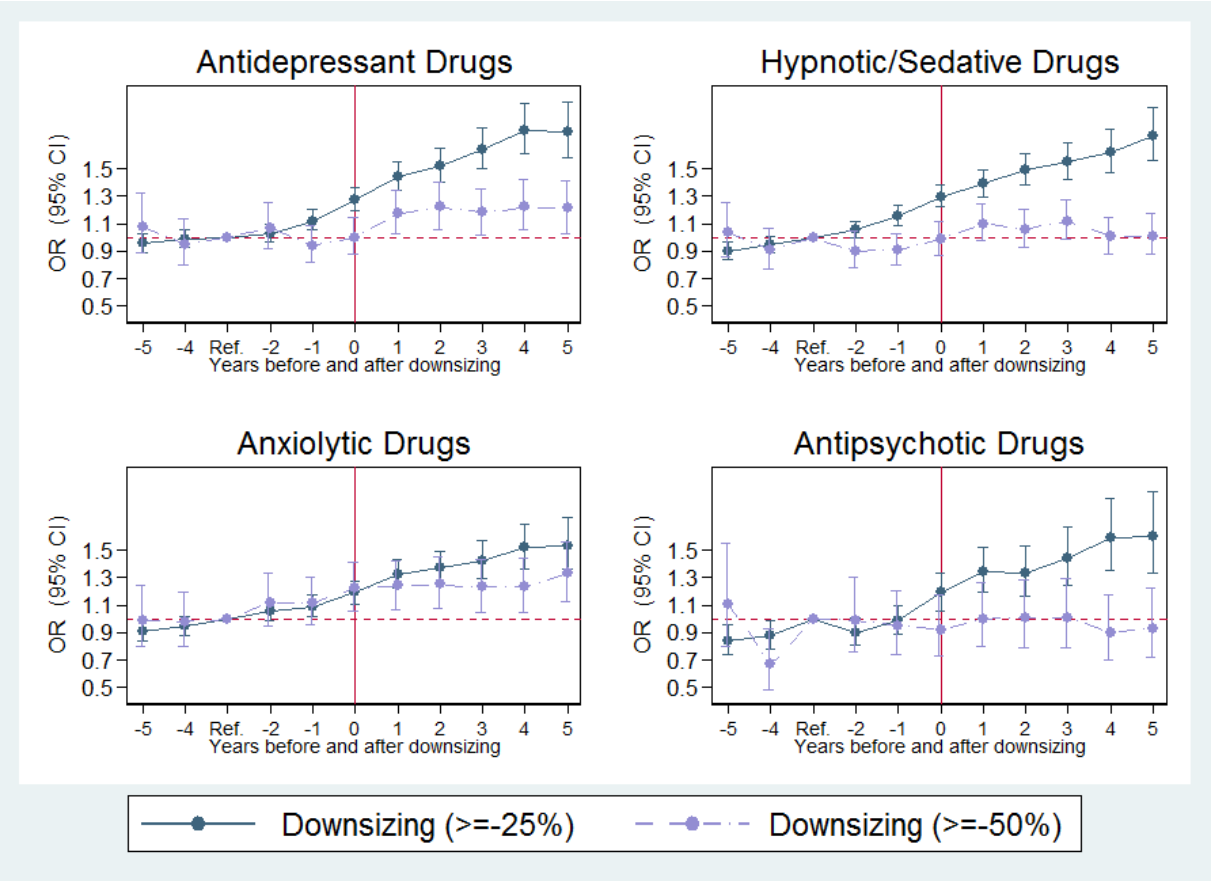

Figure F. Odds ratios (OR) with 95% Confidence Intervals (CI) of purchasing antidepressants, hypnotic/sedative drugs, anxiolytic drugs and antipsychotic drugs, respectively, in the years before and after exposure of ≥25% downsizing and ≥50% downsizing, respectively (year 0, red line) with year -3 as the reference year. Dashed line indicates OR = 1. Observation period: 1st 2004 to December 31st 2012. Adjusted for age, sex, education and time-trends.

Sensitivity analysis – 5-10% workforce reduction

We also performed sensitivity analyses on a subset of the working population that experienced 5-10% organisational downsizing. A 5-10% reduction could be seen as within normal fluctuations of number of employees (i.e. minor or no real downsizing). As S-Figure 7 and S-Figure 8 show, there was almost a flat trend line using this cutoff. Hence, the weaker results from the model with a 5-10% reduction strengthens the story in our main analysis.

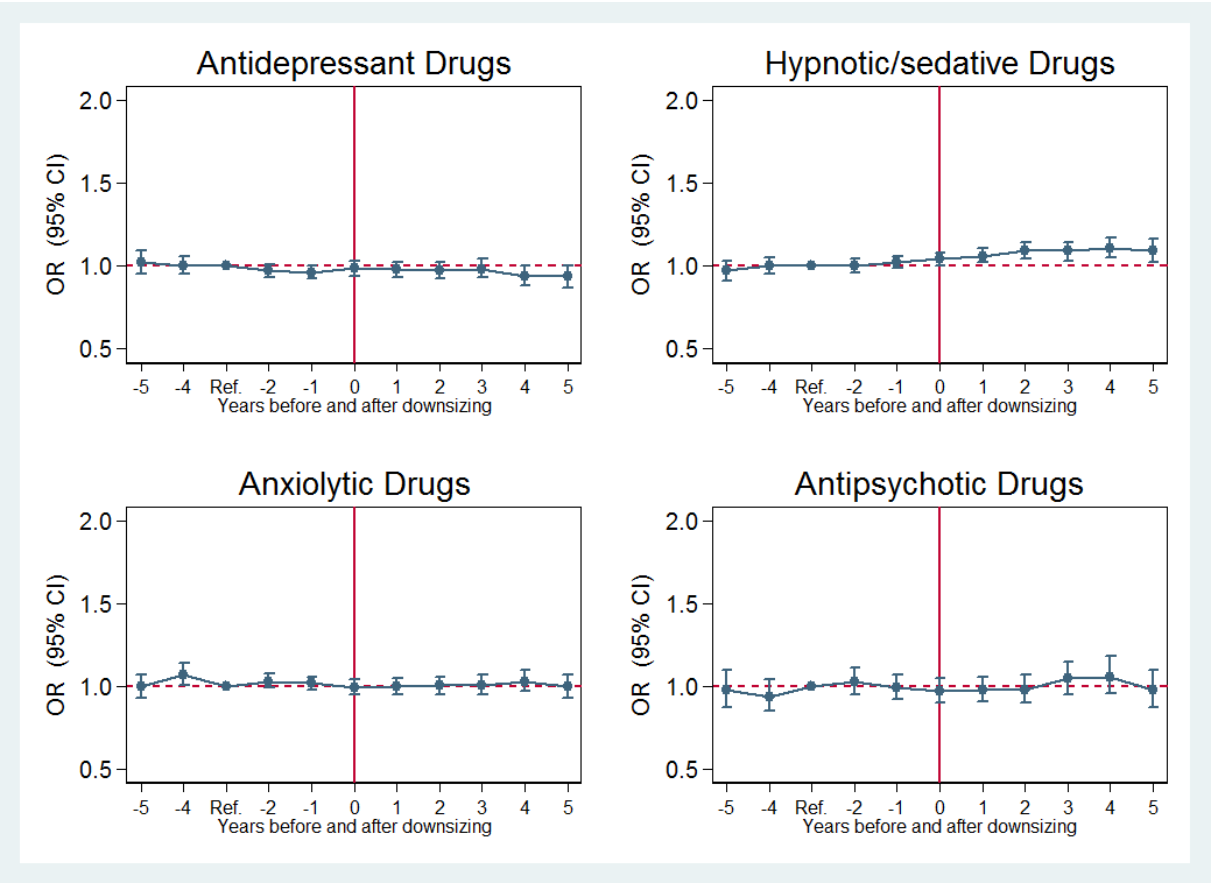

Figure G. Odds ratios (OR) with 95% Confidence Intervals (CI) of purchasing antidepressants, hypnotic/sedative drugs, anxiolytic drugs and antipsychotic drugs, respectively, in the years before and after exposure of ≥5-10%% downsizing (year 0, red line) with year -3 as the reference year. Dashed line indicates OR = 1. Observation period: 1st 2004 to December 31st 2012. Adjusted for age, sex, education and time-trends.

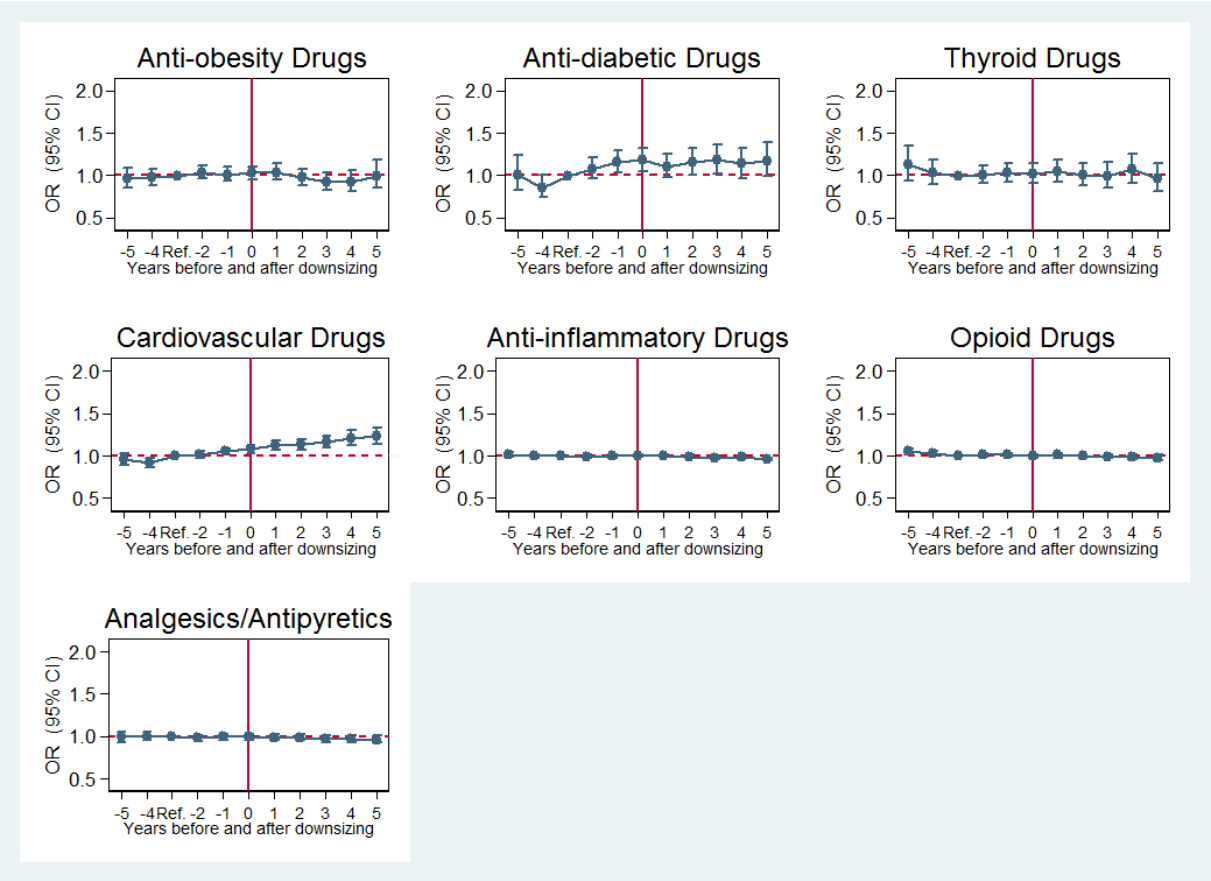

Figure H. Odds ratios (OR) with 95% Confidence Intervals (CI) of purchasing drugs for somatic conditions and pain, in the years before and after exposure of ≥5-10%% downsizing (year 0, red line) with year -3 as the reference year. Dashed line indicates OR = 1. Observation period: 1st 2004 to December 31st 2012. Adjusted for age, sex, education and time-trends.

Sensitivity analyses – reference time

In the main analyses on psychotropic drug purchase, the time variable included year -3 before downsizing as the reference time point. We reran the main analysis with a collapse (mean) of year -2, -3 and -4 as the reference time point, to test whether or not the estimates were sensitive regarding choice of reference time. The results are presented in the table below. They show no profound differences between estimates in the two models, except from antipsychotic drugs where the main analyses gave estimates that were somewhat more modest. 95% confidence intervals are presented in the figures in the article, changing the reference time point did not alter precision.

Table B. Odds ratios (OR) of purchasing antidepressants, hypnotic/sedative drugs, anxiolytic drugs and antipsychotic drugs, respectively, in the years before and after exposure of plant downsizing (year 0) with year-3 vs. a collapse of year -2, -3 and -4 as the reference time point. Observation period: 1st 2004 to December 31st 2012.

	Antidepressants		Hypnotics/sedatives		Anxiolytics		Antipsychotics	
Ref. time	-3	(-2 to -4)	-3	(-2 to -4)	-3	(-2 to -4)	-3	(-2 to -4)
	OR	OR	OR	OR	OR	OR	OR	OR
Year -5	0.96	0.94	0.90	0.91	0.91	0.92	0.84	0.91
Year -4	0.99	Ref.	0.95	Ref.	0.95	Ref.	0.88	Ref.
Year -3	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.
Year -2	1.03	Ref.	1.06	Ref.	1.06	Ref.	0.90	Ref.
Year -1	1.12	1.12	1.16	1.14	1.09	1.07	0.99	1.07
Year 0	1.27	1.28	1.29	1.26	1.19	1.16	1.19	1.27
Year 1	1.44	1.45	1.39	1.34	1.32	1.28	1.34	1.44
Year 2	1.52	1.54	1.49	1.43	1.37	1.32	1.33	1.43
Year 3	1.64	1.67	1.55	1.48	1.42	1.37	1.44	1.55
Year 4	1.78	1.82	1.62	1.54	1.52	1.45	1.59	1.70
Year 5	1.77	1.82	1.74	1.64	1.53	1.46	1.60	1.71

Unemployment rates – Norway vs. EU and the US

The figure below presents unemployment rates in age-groups 15-64 in the European Union, the United States and Norway, based on official numbers from the Organisation for Economic Co-operation and Development (OECD).

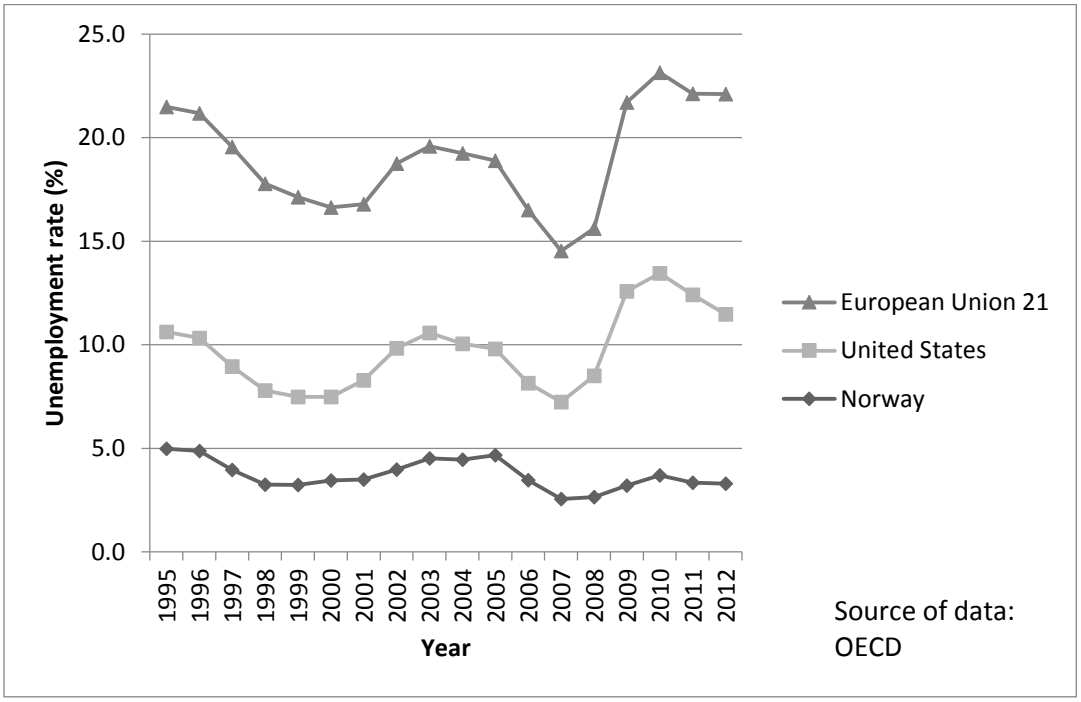

Figure I. Annual unemployment rate (percent) in the European Union (EU 21), US and Norway, age group 15-64, 1995-2012

STROBE statement

The authors confirm that the STROBE checklist was followed in this article:

	Item No	Recommendation
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract Author: Study design (natural experiment) is included in the title
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found **Author: See abstract.**
Introduction		
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported **Author: See sections one and two in the introduction.**
Objectives	3	State specific objectives, including any pre-specified hypotheses **Author: See the last part of the introduction.**
Methods		
Study design	4	Present key elements of study design early in the paper **Author: See sections under the subheadings "Design and study population"**

Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection **Author: See section referred to under item nr. 4 above.**
Participants	6	(*a*) *Cohort study*—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up *Case-control study*—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls *Cross-sectional study*—Give the eligibility criteria, and the sources and methods of selection of participants **Author: See section "Design and study population" under Material and Methods.**
		(*b*) *Cohort study*—For matched studies, give matching criteria and number of exposed and unexposed *Case-control study*—For matched studies, give matching criteria and the number of controls per case
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable **Author: See sections under subheadings "Outcome ascertainment", "Definitions of downsizing and plant closure" and Empirical strategy. Confounding is commented in the first section under the subheading "Subgroup- and sensitivity analyses".**

Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group **Author: All data was provided from national registries. See section "Data provision".**
Bias	9	Describe any efforts to address potential sources of bias **Author: See first sections under subheadings "Design and study population" and "Subgroup- and sensitivity analyses".**
Study size	10	Explain how the study size was arrived at **Author: See subheadings "Design and study population" and Table 1**
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why **Author: Se sections "Study population and data provision" and "Empirical strategy".**
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding **Author: See "Empirical strategy" and "Subgroup-, supplementary- and sensitivity analyses".**
		(*b*) Describe any methods used to examine subgroups and interactions **Author: See point 12 above.**
		(*c*) Explain how missing data were addressed

		Author: No missing data on outcome variables and most covariates. 10% missing on the education variable, treated as missing at random.
		(*d*) *Cohort study*—If applicable, explain how loss to follow-up was addressed *Case-control study*—If applicable, explain how matching of cases and controls was addressed *Cross-sectional study*—If applicable, describe analytical methods taking account of sampling strategy **Author: Case-crossover. Right censoring (loss to follow-up) was described under the subheading "Design and study population".**
		(*e*) Describe any sensitivity analyses **Author: Sensitivity/supplementary analyses are referred to under "Results" as S-Table X and S-Figure X in the supplementary file/appendix.**
Results		
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed **Author: See Table 1.**
		(b) Give reasons for non-participation at each stage **Author: See section "Design and study population".**
		(c) Consider use of a flow diagram **Author: Considered, but not found applicable here.**

Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders **Author: See Table 1 in the manuscript. Also, see the first section under "Results".**
		(b) Indicate number of participants with missing data for each variable of interest Author: **See Table 1 in the manuscript.**
		(c) *Cohort study*—Summarise follow-up time (eg, average and total amount) Author: The observation period was 2004 to 2012, as described under "Methods"
Outcome data	15*	*Cohort study*—Report numbers of outcome events or summary measures over time
		Case-control study—Report numbers in each exposure category, or summary measures of exposure **Author: See Table 1.**
		Cross-sectional study—Report numbers of outcome events or summary measures
Main results	16	*(a)* Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included **Author: See the second section under "Results". Also, see the figures providing odds rations with 95% confidence intervals.**

		(b) Report category boundaries when continuous variables were categorized **Author: See Table 1.**
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period **Author: Not relevant.**
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses **Author: See results and supplementary file/appendix.**
Discussion		
Key results	18	Summarise key results with reference to study objectives **Author: See section one under "Discussion".**
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias **Author: See subheading "Strengths and limitations".**
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence Author: See subheadings **"Strengths and limitations", "Interpretation and comparison with previous studies".**
Generalisability	21	Discuss the generalisability (external validity) of the study results **Author: See section under subheading "Context and generalizability"**
Other information		

Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based **Author: See section under subheading "Acknowledgements".**

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at www.strobe-statement.org.