

USE OF PSYCHOTROPIC DRUGS AND ECONOMIC RECESSION IN THE EC-COUNTRIES 1978-1987

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Summary

This study explores the association between the economic decline and the consumption of psychopharmaceuticals in Western Europe in the early 1980s. It starts from the hypothesis that the recession had psychologically harmful effects, which caused an increase in the use of psychotropic drugs. National sales data of these drugs are analyzed. The analysis shows that only the use of tranquilizers did in fact increase during the economic recession. The use of hypnotics and sedatives, anti-depressants and neuroleptics did not change consistently in the eight countries studied. Variations in the severity of economic decline between countries do not explain different changes in use levels. However, variations in social security do make a difference: in countries with a low level of social security the use of neuroleptics increased during the recession, while in countries with a high social security level, use of these drugs tended to decline. Conversely, use of tranquilizers rose in countries with a high level of social security, while it remained stable in countries low in social security.

1 INTRODUCTION

This chapter explores the association between the use of psychotropic drugs and economic decline during the early 1980s in eight EC-countries. The study starts from the assumption that psychotropic drug use is an indicator of the prevalence of psychological disorders. The question is whether the economic recession of the early 1980s caused greater incidence of disorders, leading to an increase in the use of psychotropic drugs.

The question of whether economic decline causes psychological problems has been studied in different ways. In their review of the literature, Dooley and Catalano (1986) differentiate between two basic types of studies: individual level vs aggregate level studies. Both types have their advantages and shortcomings. A major advantage of aggregate level studies is that they reflect environmental effects of changes in the economic situation beyond the sum of the individual effects, such as job losses (Firebaugh, 1978). These environmental effects may include demoralization caused by the anticipation of personal economic loss, the reduction of more attractive employment opportunities and the reduction of public services due to declining tax revenues. These environmental effects may be expected to vary with the level and quality of social security arrangements. The psychologically harmful effects of economic decline can probably be mitigated to some extent by such arrangements. Because the level of social

security varies considerably among European countries, it is expected that the consequences of the economic crisis, in terms of psychological pathology, will vary across countries.

Dooley and Catalano (1986) distinguish three types of disorders in the studies they reviewed. The first type focuses on psychiatric symptoms as assessed in surveys. The second type concerns psychiatric admissions or help seeking, and the third type suicide rates. Most studies of the aggregate level type deal with psychiatric admissions or suicide. Only two studies used psychiatric symptoms (Catalano & Dooley, 1977; Dooley et al., 1981). The main reason for the lack of studies of the first type is that time series on the prevalence of psychiatric complaints are not readily available, psychiatric population surveys being very expensive.

Dooley and Catalano did not find any aggregate level study that used the consumption of psychotropic drugs as an indicator of the prevalence of mental disorders. This is quite remarkable, because there is an abundant literature on the epidemiology of psychotropic drug use and some studies include time series analyses (King et al., 1982; Marks, 1983; Williams, 1986). However, not one of them addresses the question of a possible association between economic changes and drug consumption at the aggregate level.

Epidemiological studies on the use of psychopharmaceuticals have usually found only rather weak associations with socioeconomic variables. For instance, Bazuin and Mulder (1981) found more use among the unemployed and in the lower social strata in the Netherlands, but it remains unclear whether unemployment is a cause of psychological distress (and the subsequent use of psychopharmaceuticals) or rather an effect. King et al. (1982) concluded from their study in Northern Ireland that only the use of one type of drug, i.e. neuroleptics, was associated with unemployment, and only in rural areas. Williams et al. (1982), studying the prescription behaviour of general practitioners in England, found that long-term use was more prevalent among patients with marked social problems, but only among females. Mellinger et al. (1979) raised the question of whether social problems tend to increase drug consumption, irrespective of psychiatric consumption. Haaijer-Ruskamp and Stewart (1985) investigated the matter in a study on the prescription behaviour of Dutch general practitioners and found that psychopharmaceuticals are often prescribed to women who have no complaints or symptoms other than 'social problems'.

By far the most important determinants of psychotropic drug use in terms of patient characteristics are age and sex. All studies have found a sharp increase in use levels with rising age, and another remarkably consistent finding is that women use psychotropic drugs about twice as much as men do.

As stated at the beginning of this chapter, the hypothesis tested here is that the sudden economic decline in the early 1980s, affected the lives of many people in European countries in such a way, that they felt more insecure, anxious, fearful or nervous than in the preceding period or than in the period following this economic recession. As a consequence, people used more psychopharmaceuticals in order to suppress or alleviate such feelings. Hence, an inverse relationship is expected between the trend line of the economy and the sales line of drugs. Because the general trend in drug use is also influenced by several non-economic factors (like the ageing of the population), this trend itself is rather irrelevant to the hypothesis. The core question is whether this trend (be it stable, decreasing or increasing) changes during the crisis period in the direction predicted. Some possible patterns are presented here. (See Figures 1.1, 1.2, 1.3)

It is important to note that the expected relationship represents in fact a two-step causality: 1. economic decline causes mental disturbances, 2. mental disturbances cause an increase in the use of some types of drugs. This two-step causality increases the possibility of disturbance of the relationship by intermediate factors. The relationship between economic change and the prevalence of mental health problems is quite complex, and in many ways indirect. The same can be said about the relationship between mental health problems and the use of psychopharmaceuticals. Apart from morbidity itself, three other factors determine the level of use. These are: consumer demand variables, prescription variables and duration of use (Bazuin & Mulder, 1981; Williams et al. 1986).

In this study the question of duration of use is important, because national sales data are used. An increase in sales might indicate at least two different trends: 1. an increase in the number of patients using a certain drug, or 2. an increase in the mean duration of use per patient. These methodological problems will be discussed at the end of this chapter.

2 DATA

2.1 Indicators of economic decline

Two indicators of the economic rise and decline (or "Crisis") were used: 1. Standardized unemployment rates: SUR (in two countries, Ireland and Greece, 'unemployment as a percentage of the total labour force' was used, in the absence of standardized rates). 2. Real private consumption expenditure: PCE. These indicators were chosen, because they are expected to be most closely related to individual well-being. Data cover the period 1976-1985. More recent data were not yet available.

To check whether the crisis hurts less in countries with high social security, the percentage of GDP used for social security transfers was taken as a parameter. Countries where these transfers were less than 14% were defined as having 'low', and those over 14% as having 'high' social security.

2.2 Indicators of psychotropic drug use

From the broad spectrum of psychopharmaceutical products that are available, the three major groups of products were chosen:

Hypnotics, sedatives and tranquilizers are very closely related products. In fact, the active substances of these medicines are to a large extent of the same kind. By far the most frequently used substances belong to the group of the benzodiazepines (lorazepam, oxazepam, nitrazepam etc.). These substances have largely replaced the older barbiturates.

The main difference between hypnotics and tranquilizers is that the former are used for the night (sleeping tablets) and the latter during the day. Pharmacologists still disagree as to whether some substances reduce fear and anxiety in a more direct way than by simply sedating the patient. There seems to be some evidence of such a specific effect of some tranquilizers (or anxiolytics).

Most products in the group of tranquilizers are exclusively to reduce anxiety, fear and tension. However some products are also prescribed for different indications. The same holds for hypnotics; most of them are exclusively prescribed for sleeplessness, while a few of them are also used for other mental disturbances.

Anti-depressants are different from the psychopharmaceuticals just mentioned. They are mainly used in patients who suffer from severe depression. These drugs have anti-depressive, as well as activating and sedative/anxiolytic effects. They are used far less than the other psychotropic drugs.

Neuroleptics are primarily used to treat severe psychiatric disorders (psychosis). Consequently these drugs are mainly used in psychiatric hospitals. Nevertheless, they are also prescribed in general practice, mainly to the aged.

National wholesale data for these products were very kindly produced, for the purpose of this study, by the Institute for Medical Statistics (IMS Nederland BV). This institute, which works in several countries, monitors the sales of pharmaceutical products. Data sets covering the period 1978-1987 were produced by IMS for 8 EC-countries: the United Kingdom, the Irish Republic, the Netherlands, Belgium, the Federal Republic of Germany, France, Italy and Greece. These data include national sales in terms of the smallest countable units, defined by active substance. The smallest countable unit can be a pill, a tablet, a millilitre of liquid, a capsule, etcetera. The data do not allow for the calculation of numbers of users, per day or per

year. This is because some units (pill, tablet, drops of liquid etc.) are taken once a day, others several times a day, or even less than a unit per day may be taken (e.g. half a sleeping tablet). Therefore the number of countable units is nothing more than an index of the total use. However, it is not very likely that during the short period studied (only 10 years) the expected change in the general trend could be caused by sudden changes in dosages used.

The data do allow for trend analyses per country, but strictly speaking they cannot really be used for international comparative purposes. They can just give a very general insight into differences in use-levels between countries.

RESULTS

3.1 Trends in the use of psychotropic drugs

Tranquilizers. **Figure 2** presents an overview of the trends in the use of tranquilizers. The data signify the number of countable units of tranquilizers sold in each country per year per inhabitant. So, for instance in Belgium, on average, every inhabitant took about 40 tranquilizers during the year 1987.

Figure 2 shows two things. Firstly, a huge difference in the use of tranquilizers between countries, with France showing a level 5 times as high as Britain in 1987. Secondly, a decrease appears in four countries (the Netherlands, Ireland, the UK and the German Federal Republic), while in the remaining four countries the use increases.

Hypnotics and sedatives.

The use of these drugs also varies strongly between countries. (**Figure 3**)

Again France has the highest level of the 8 countries, followed by the FRG, while use of these pharmaceuticals is low in Greece. The other 5 countries make up the middle range. The incidence of use is rather stable over the years.

Anti-depressants.

As was mentioned above, anti-depressants are less common. Whereas the use of tranquilizers varies around 20 c.u. per inhabitant per year and about the same holds for hypnotics and sedatives, anti-depressants show an incidence of 5 to 10 per inhabitant per year. (**Figure 4**)

Again France is rather an exception, showing an elevated level of use and a strong increase over the years.

Neuroleptics.

Use of neuroleptics is approximately at the same level as anti-depressants. (See **Figure 5**)

The countries do not show a common trend in the consumption level of these drugs. In Italy and Belgium the level of use has remained almost stable, the Netherlands and France show a slight decrease and in Germany a clear upward trend can be observed. Consumption rates in Ireland and Greece have fluctuated during the period studied. Most remarkable is the very steep rise in the United Kingdom, for which no explanation is known to the author.

To sum up:

Taking the four groups of psychotropic drugs together, the following conclusions can be drawn:

1. There is a big difference in the level of use between the countries studied, with France showing exceptionally high levels on each of them, and Greece showing rather low levels, with the exception of neuroleptics.
2. There is no common pattern in the development over the 10 years under investigation. In some countries use mainly increased over the years, in others it tended to decrease, while in still others the lines go up and down. The theoretical expectations shown in **figure 1** are not immediately visible.

3.2 Economic decline and use of psychotropic drugs

Data on the two selected economic indicators, real Private Consumption Expenditure per capita (PCE) and Standardized Unemployment Rate (SUR) were taken from the OECD Economic Outlook 1987. The PCE data were indexed, using 1976 as a base year. Unfortunately, data on the years 1986-87 were not yet available which reduced the joint time-span to only 8 years. The data on the economic indicators for the countries studied are presented in [table 1](#) and [2](#).

Correlations between trends over time can only become convincing when they vary simultaneously in time in an upward and downward direction. It is not enough for the trends to develop among parallel lines in one direction. For instance, in the cases of France and Italy the lines of unemployment and sales of tranquilizers both went up during the whole period under investigation, but that hardly produces evidence of a causal relationship between these two observations. The period for which data were available for both the economic indicators and the sale of psychopharmaceuticals was only 8 years, which is very short for both an up- and a downward trend to occur in one variable. Furthermore the number of countries studied is quite limited. Therefore a sophisticated computation of correlations is not feasible.

Instead a relatively simple procedure to approximate the relationship between economic decline and level of psychotropic drug use was developed. As a first step a three- or four year 'crisis-period' was defined for each individual country. This was defined as the period in which unemployment rose most sharply and in which the decline of the PCE-index was most pronounced. For most countries this was the period 1981-'83, for some it was a year earlier or later. As a consequence two other periods arose, one preceding and one following the crisis period, each of three or four years.

As a second step the mean annual number of sales for each of the four categories of psychopharmaceuticals was computed for each of these three periods. Again, this period mean was computed for each individual country.

As a third step, the theoretical mean number of sales during the middle- or crisis period was computed as the numerical mean between the first and the third period. In other words, a straight line was drawn between the first period mean and the third period mean. As has been indicated earlier, countries may show an autonomous upward or downward development in the use of drugs, independently of the variables studied. This computation adjusts for these autonomous developments (see again [figure 1](#)).

As a final step the computed theoretical mean during the crisis period was confronted with the actual mean during that period. The difference between these two means indicates an elevated or a reduced consumption level of the drugs during the crisis period as compared to the theoretical level of use, in case the pattern of use had simply developed linearly.

This computation was carried out twice, the second time with a one-year period shift, assuming that the crisis might affect drug use with some delay (Tennant et al., 1981). The results of this analysis are shown in [table 3](#).

Tranquilizers.

The use of tranquilizers increased during the crisis period in four of the eight countries (Belgium, FRG, Ireland and France), whereas in Greece it declined during the same period. In the three other countries no significant change appeared. The data referring to the level of use one year later show an upward deviation of the trend in four countries and no deviation in four others. If all the percentage changes were simply added up (which is not really allowed because of the differences in population sizes), an increase of 2.6% would result during the same period and 2.3% in case of a one year shift. In the first category that effect is almost exclusively produced by FRG and Ireland where an increase of 10.9% and 7.9% occurred, respectively.

Hypnotics, sedatives

In this category tendencies are conflicting as well. The use of these drugs declined markedly during the crisis period in four countries. It remained stable in two and it increased in two countries. At a one year shift three countries show a decline, one shows an upward trend and four show no marked change. The overall pattern is one of reduced use during and shortly after the crisis period. The hypothesis of increased use during the crisis does not receive any support in this category of drugs.

Anti-depressants

The same holds for the category of anti-depressants. There were only two countries (or three after a one year shift) with a marked increase in use during the crisis period. When the percentages difference between the expected and the actual levels are added up, the outcome is a mean decline of 2.1% during the crisis for the eight countries put together; the decline one year later is 0.7%. So again no support is found for the original hypothesis.

Neuroleptics

The use of this kind of drugs remains stable in two countries, three others show a decline, two (the UK and Ireland) show an increase. In the UK the level during the crisis period was 14.5% higher than the expected level and after a one year shift this was even 31% higher. In Ireland these percentages were 8.9 and 6.5, respectively.

To sum up:

There is no consistent evidence for an increase in the use of psychotropic drugs during the recession or shortly after. However, there are significant differences between the countries studied that require further exploration.

3.3 Severity of the crisis

Has the recession hurt at least in the most affected countries? In order to check that possibility an index of severity was constructed, which is shown in the right column of [table 3](#) (page 145). The index shows that Ireland and the Netherlands were most severely affected, while France and Italy were least affected.

When this index is confronted with the results on the left of the table, an even more confusing pattern emerges. As expected the three countries that suffered most from the crisis (the Netherlands, Greece and Ireland) show most change in drug use during the crisis. Yet, the changes are not in the same direction! The expected increase was indeed found in Ireland in all four categories (+8%, +10%, +11% and +9%) But in Greece a downward trend in psychotropic drug use was observed (with the exception of neuroleptics after a one year shift). In the Netherlands, however, the use of hypnotics and sedatives, anti-depressants and neuroleptics went down significantly (-16%, -11% and -5%, respectively). The use of tranquilizers remained unchanged in the Netherlands.

3.4 Social security

One explanation for the above difference might be social security. In countries such as the Netherlands high social security could buffer the effects of the crisis and thus mitigate the increase in tensions and subsequent drug-use.

To test this possibility, the countries studied were classified in two categories of social security. Countries where less than 14% of the GDP was used for social security transfers were classified as having 'low social security', and countries with more than 14% as having 'high social security'. According to this definition, the UK, Ireland and Greece had low social security, and the other five countries high security.

[Table 4](#) presents the relative changes in the consumption rates of psychopharmaceuticals during the crisis and with a one-year shift in both categories of countries. The symbols indicate the mean changes per country in each category.

The outcome in [table 4](#) is rather surprising. The two groups differ remarkably. In countries with low social security a strong increase took place in the use of neuroleptics, but not in any of the other categories. On

the other hand, in countries with high social security there was an increase in the use of tranquilizers, a decrease in the use of hypnotics and sedatives and a slightly decreasing tendency in the anti-depressants and neuroleptics.

The pattern of the last three categories of drugs seems to confirm the hypothesis that social security reduced the harmful effects of the economic crisis. This is most pronounced in the case of neuroleptics which are mainly prescribed in psychiatric hospitals. However, no indication at all is found for social security arrangements having a reducing effect on the level of use of tranquilizers, which are being used for milder psychological pathology.

4 DISCUSSION

All in all we found no clear link between economic decline and the use of psychotropic drugs. Is that because this recession did not really hurt or because of an imperfect relation between psychological tensions and drug use? There are at least two alternative explanations.

4.1 Increased tensions not reflected in drug sales?

The link between psychological problems and the use of psychotropic drugs seems more evident than it really is. There are at least three mediators in this relationship which can seriously distort the picture.

First: 'illness behavior' plays an intermediating role. The person facing tensions has a wide range of options: not only going to the doctor and having a drug prescribed, but also visiting a psychotherapist, talking with spouse and friends, drinking more alcohol and even neglecting the problem and finally developing an ulcer or getting a heart attack. Second: 'prescription behavior'. Doctors have various options when their patients complain of anxiety, stress, sleeplessness, etc. The preference for drug therapy varies from doctor to doctor, from country to country and through time. Choice depends on their opinions about possible side effects, on the time available, on views of their role as a doctor and so on (Bazuin & Mulder, 1981).

Third: the aggregate level of drug sales, which is used in this analysis, is only indirectly related to the number of users. There are two complicating factors: 1) A particular sales level may either be the result of a relatively limited number of patients who use these drugs continuously, or it can result from a larger number who use them sporadically (Williams 1983); 2) This relationship is indirect, because of the variability in therapy compliance. Not all the drugs that are prescribed are also used, and non-use may vary through time. Williams (1983) found that about 6% of prescribed psychopharmaceuticals were 'hoarded' in people's homes.

These three intermediate variables disturb the direct relationship between national sales and the prevalence of mental disorders and therefore weaken the power of these sales data as an indicator of prevalence of mental health problems.

4.2 Increased use among working males paled to insignificance besides steady use among elderly women?

The basic hypothesis underlying this analysis was that the economic crisis causes unemployment, diminishing household incomes, generalized feelings of insecurity, shrinking future perspectives and the like, which in their turn cause mental health disorders in people who are confronted with these problems. These people are primarily people in the working force, who face unemployment and income decline. The question then is: are these people also the main users of psychotropic drugs? The answer probably is that they are not! Epidemiological research on the use of psychotropic drugs indicates at least two almost universal tendencies. First, women use them more than men; about twice as much in almost every study. Second, use increases sharply with age. [Figure 6](#) clearly illustrates this strong association between age and psychotropic drug use.

The general pattern is that psychotropic drugs are mostly used by old women. Now they are not the ones we think of primarily when we talk about mental health effects of unemployment or related changes in social conditions. So, at first sight one would tend to conclude that for that reason hardly any relationship was found in this analysis. On second thought however, just the opposite conclusion seems to be more likely. If psychotropic drugs are mainly taken by older people, particularly old women (many of them living in nursing homes), who are relatively unaffected by the economic crisis, so that their level of use, which is a large part of the total use, remains stable, then a small increase in the total level would indicate a relatively large increase among those segments of the population that are affected by the crisis. If that were true, then the associations found in this analysis between economic decline and level of psychotropic drug use, particularly regarding tranquilizers, would be more significant than could appear here. Supplementary research is definitely needed at this point. Therefore, aggregate level time-series analyses of the type presented in this chapter should be supplemented by epidemiological survey data in order to be able to draw more convincing conclusions.

4.3 The less social security in the country, the more serious the crisis harms mental health?

Finally, some words about the remarkable difference between countries with high and with low social security. One would expect that changes in economic conditions would primarily affect the prevalence of minor psychiatric disorders, like nervousness and sleeplessness. In this line one expects an increase in the use of tranquilizers during the crisis but no increase in anti-depressants and neuroleptics that are mainly used to treat patients with severe psychiatric illnesses. This is what we actually see in countries characterized by high social security. Remember [table 4](#). In countries of low social security we rather see the reverse. No increase in the use of tranquilizers, but a marked increase in the use of neuroleptics. This may mean that the recession worked out differently: mild anxiety in countries of high social security and psychotic breakdowns in countries of low social security. This hypothesis is worth further investigation because it would explain a lot of the contradictions in current epidemiological research.

5 CONCLUSION

It was expected that: 1) Economic decline would have caused an increase in psychopathology and consequently an increase in the use of psychotropic drugs; 2) Those countries that were most severely hit by the crisis would show the sharpest increase in drug use; 3) Psychologically harmful effects of the crisis would be reduced by a high level of social security.

The main findings are:

1. Fluctuations in the economy hardly predict psychotropic drug use. Most countries show rising, falling or stable trends in the level of use, largely independent of sudden economic changes.
2. Tranquilizers excepted, the economic recession did not go with an increase in the use of psychotropic drugs.
3. Drug use did not increase more in the countries that were most affected by the recession.
4. Drug use followed the recession more closely in countries characterized by low social security than in countries of high social security.
5. In countries of low social security the recession was followed by greater use of neuroleptics. In countries of high social security only tranquilizer sales increased.

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Table 1.

Standardized Unemployment Rates (SUR) in 8 EC-countries, 1976-1985

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
France	4.4	4.9	5.2	5.9	6.3	7.4	8.1	8.3	9.7	10.1
Italy	6.6	7.0	7.1	7.6	7.5	8.3	9.0	9.8	10.2	10.5
UK	5.6	6.1	5.9	5.0	6.4	9.8	11.3	12.5	11.7	11.3
FRG	3.7	3.6	3.5	3.2	3.0	4.4	6.1	8.0	8.5	8.6
the Netherlands	5.5	5.3	5.3	5.3	6.0	8.5	11.4	12.0	11.8	10.6
Belgium	6.4	7.4	7.9	8.2	8.8	10.8	12.6	12.1	12.1	11.2
Ireland*	9.0	8.8	8.2	7.1	7.3	9.9	11.4	14.0	15.6	17.4
Greece*	1.9	1.7	1.8	1.9	2.8	4.1	5.8	7.9	8.1	7.8

* unemployment as % of total labour force

Table 2.

Real Private Consumption Expenditure (PCE) per capita in 8 EC-countries, 1976-1985

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985
France	100	103	107	110	111	113	115	116	116	119
Italy	100	101	103	108	113	114	114	115	117	119
UK 100	101	106	111	110	110	111	115	117	121	
FRG	100	105	109	113	114	113	111	114	116	118
The Netherlands	100	104	108	110	109	106	104	105	104	105
Belgium	100	102	105	109	111	111	112	110	111	113
Ireland	100	105	113	117	116	117	106	104	102	103
Greece	100	103	107	109	107	107	110	110	112	114

Table 3.

Growth or decline in sales of psychotropic drugs during the economic crisis in 8 E.C. countries

Country	<u>Psychotropic drug group</u>				<u>Severity of crisis</u>		
	Tr.	H/S	A-D	Neur	SUR	PCE	Total
<u>During crisis</u>							
France	+	0	0	0	+	0	+
Italy	0	--	-	0	0		0
UK	0	0	++	++	0	++	
FRG	++	-	-	-	+	+	++
the Netherlands	0	--	--	-	++	++	++++
Belgium	+	-	+	0	+	+	++
Ireland	+	++	++	++	++	++	++++
Greece	-	-	0	0	++	+	+++
<u>After 1 year shift</u>							
France	+	0	+	0	+	0	+
Italy	0	0	0	0	0	0	
UK	+	0	++	++	0	++	
FRG	0	--	-	-	+	+	++
the Netherlands	0	--	--	-	++	++	++++
Belgium	+	0	+	0	+	+	++
Ireland	+	0	+	+	++	++	++++
Greece	0	-	-	+	++	+	+++

Legend:

Psychotropic drugs

++ > 8% growth

+ > 3%, <8% growth

0 < 3% growth, <3% decline

- > 3%, <8% decline

-- > 8% decline

SUR: Stand. Unempl. Rate

++ > 6% increase

+ > 3%, < 6% increase

0 < 3% increase

PCE: Priv. Cons. Expend.

++ <0% growth

+ >0%, <3% growth

0 >3% growth

Table 4.

Change in level of psychotropic drug consumption in countries with low and high social security, during the economic crisis and one year after

Social security	tranquilizers		hypnotics/sedatives		anti-depressants		neuroleptics	
	A	B	A	B	A	B	A	B
Low	0	0	0	0	0	0	++	++
High	+	+	-	-	-	0	-	0

A: during crisis period

B: one year shift

Legend: see table 3 (page 145).

FIGURE 1.1

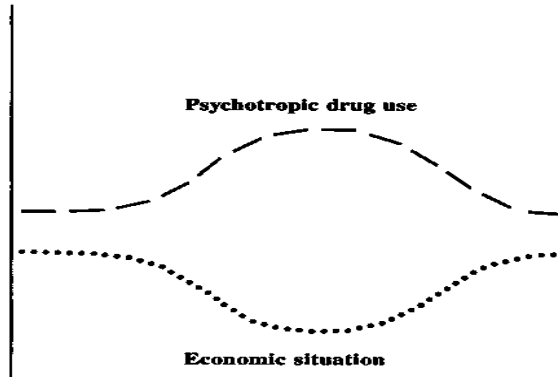


FIGURE 1.2

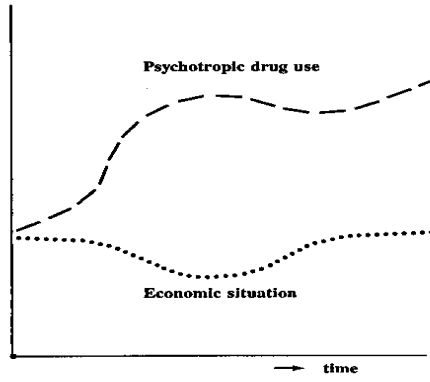


FIGURE 1.3

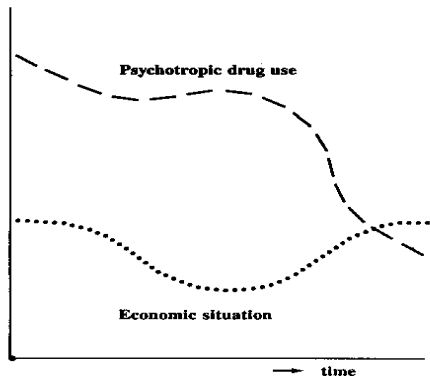


FIGURE 2
Annual sales of tranquilizers, in counting units per 1000 inhabitants, in 8 EC-countries, 1978-1987

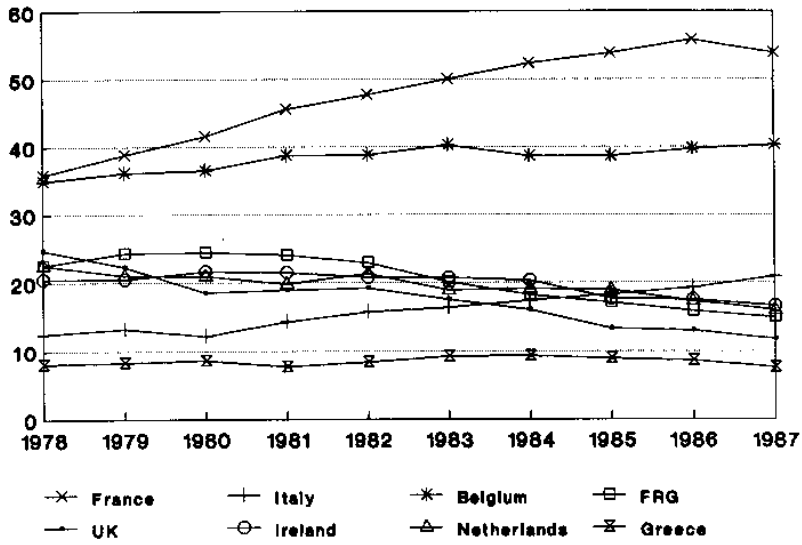


FIGURE 3
Annual sales of hypnotics and sedatives, in countable units per 1000 inhabitants, in 8 EC-countries, 1978-1987

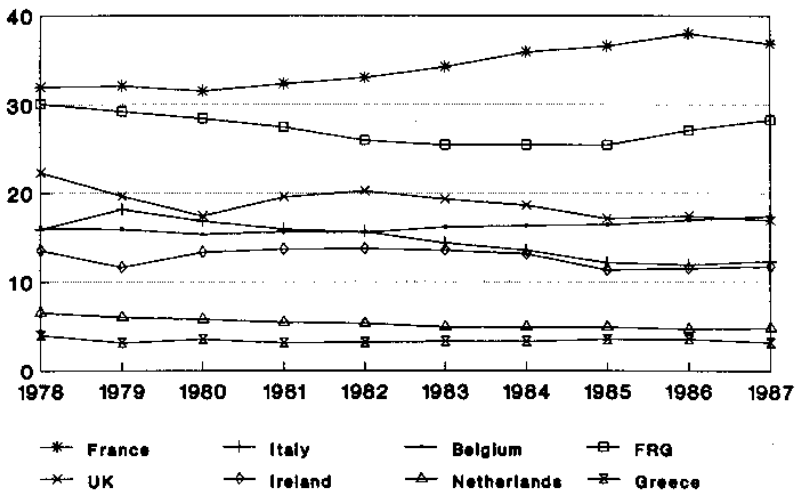


FIGURE 4
Annual sales of anti-depressants, in countable units, per 1000 inhabitants, in 8 EC-countries, 1978-1987

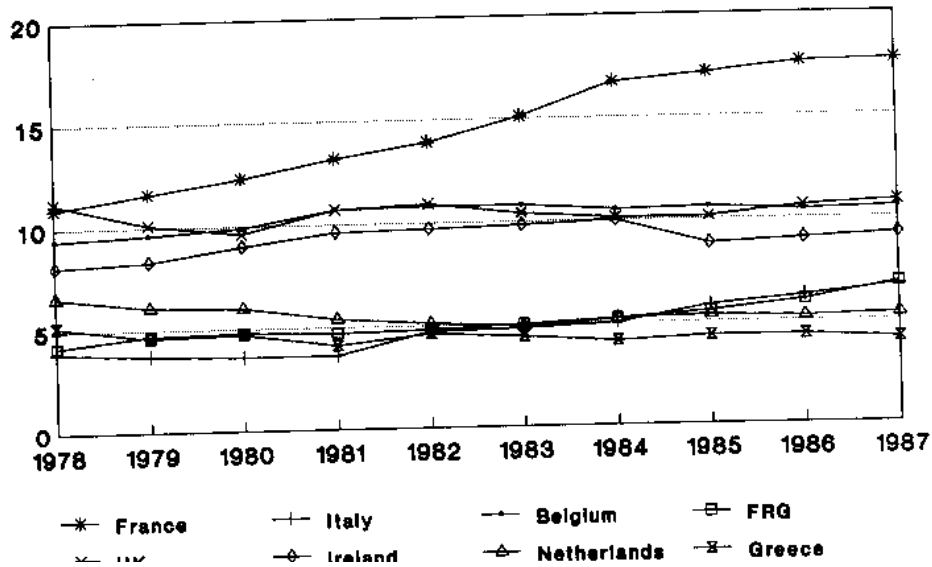


FIGURE 5
Annual sales of neuroleptics, in countable units per 1000 inhabitants, in 8 EC-countries, 1978-1987

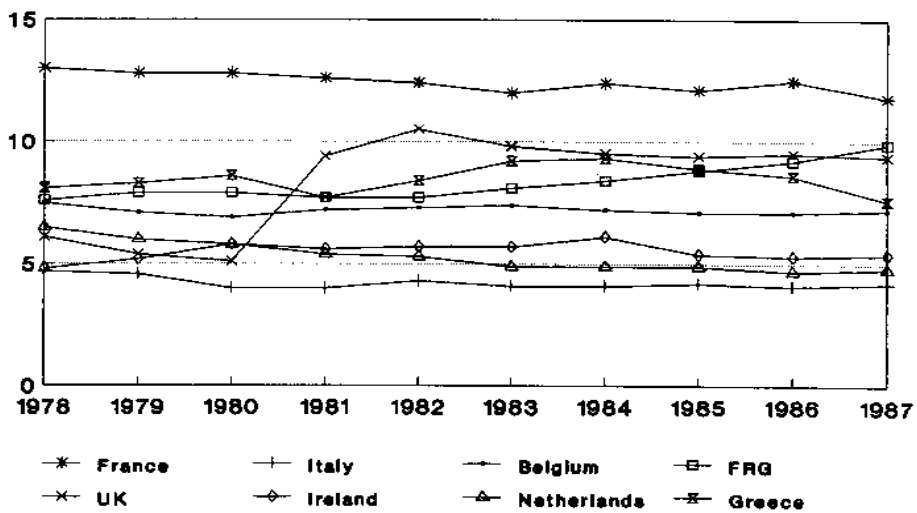
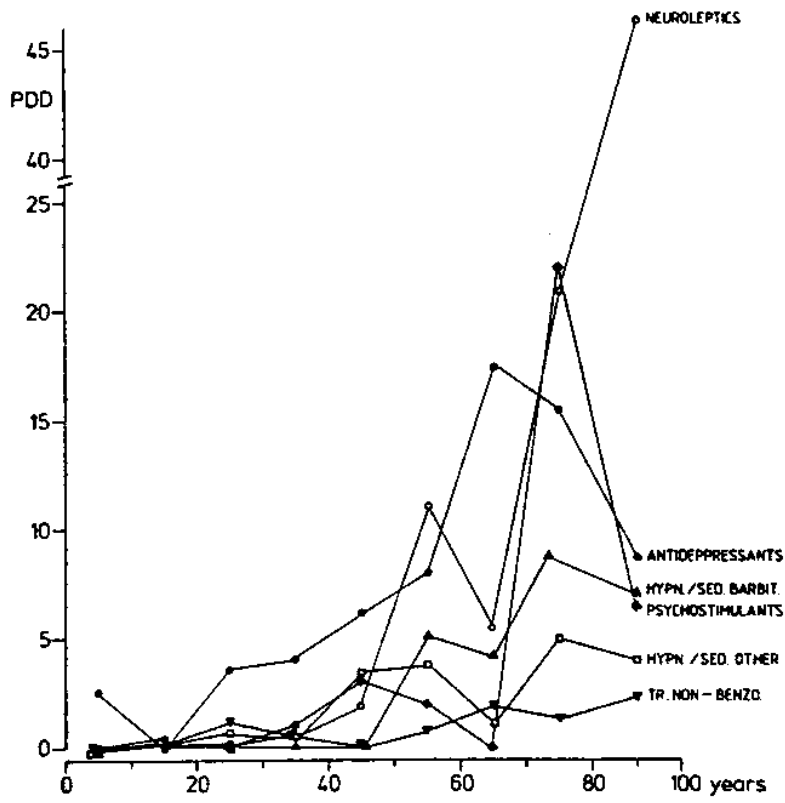


FIGURE 6
Psychopharmaca, excl. benzodiazepines
PDD/1000 women/week, Twente 1984



Source: Haaijer-Ruskamp & Stewart 1985

REFERENCES

- Bazuin, J.H. & H.C. Mulder (1981)
Gebruik van rustgevendende middelen.
Gezondheid & Samenleving 2, nr 2, 11-20.
- Catalano, R. & D. Dooley (1977)
Economic predictors of depressed moods and stressful life events,
Journal of Health and Social Behaviour 18, 292-307.
- Dooley, D., R. Catalano, R. Jackson & A. Brownell (1981)
Economic, life, and symptom changes in a non-metropolitan community,
Journal of Health and Social Behaviour 22, 144-54
- Dooley, D. & R. Catalano (1986)
Do economic variables generate psychological problems? Different methods, different answers,
in: Alan et al. eds., *Economic Psychology*, 503-547. Elsevier, Amsterdam.
- Firebaugh, G. (1977)
A rule for inferring individual-level relationships from aggregate data,
American Sociological Review 43, 557-572.
- Haaijer-Ruskamp, F.M. & R. Stewart (1985)
The medication of pain and frustration in women: the case of the Netherlands,
paper presented at the symposium "Medikamente für Frauen, Chemie für die Seele",
Bremen, November 1985.
- King, D.J., K. Griffith, P.M. Reilly & J.D. Merrett (1982)
Psychotropic drug use in Northern Ireland 1966-1980: prescribing trends, intra- and interregional comparisons and relationships to demographic and socioeconomic variables,
Psychological Medicine 12, 819-833.
- Marks, J. (1983)
The benzodiazepines: an international perspective,
Journal of Psychoactive Drugs 15, 137-149.
- Mellinger, G.D., M.B. Balter, D.I. Manheimer, I.H. Cisin & H.J. Parry (1979)
Psychic distress, life crisis and the use of psychopharmaceutic medications,
Archives of General Psychiatry 35, 1045-1052.
- Tennant, C., P. Bebbington & J. Hurry (1981)
The role of life events in depressive illness: Is there a substantial causal relationship?
Psychological Medicine 11, 379-389.

Williams, P. (1983)

Patterns of psychotropic drug use,
Social Science and Medicine 17, 845-851.

Williams, P., J. Murray & A. Clare (1982)

A longitudinal study of psychotropic drug consumption,
Psychological Medicine 12, 201-206.

Williams, P., C. Bellantuono, R. Fiorio & M. Tansella (1986)

Psychotropic drug use in Italy: national trends and regional differences,
Psychological Medicine 16, 841-850.