

# **SUMMARY of the PHARMO Report**

## **Medicinal cannabis in the Netherlands**

**PHARMO Institute**

April 2004

Drs. A.F.C. Janse

Dr. N.S. Breekveldt-Postma

Dr. J.A. Erkens

Dr. R.M.C. Herings

**For the Ministry of Health, Welfare and Sports**



## Background and objectives

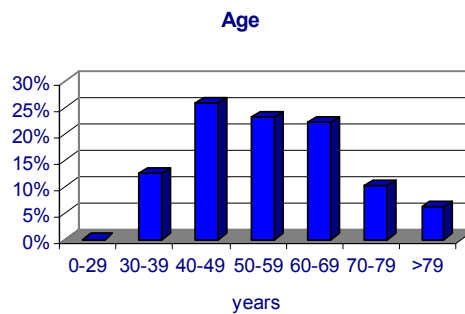
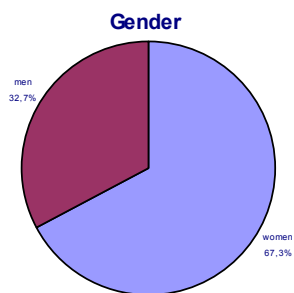
From September 2003 onwards cannabis is available for medicinal purposes in pharmacies in the Netherlands, allowing patients to have legal access to cannabis upon prescription by a medical doctor. Several indications are appointed for which the use of cannabis is considered valuable. It concerns the symptomatic treatment of spasticity in combination with pain (multiple sclerosis, spine cord damage), nausea and vomiting (with chemotherapy, radiotherapy and HIV-combination therapy), chronic pain, syndrome of Gilles de la Tourette, palliative treatment of cancer and AIDS. It is estimated that before September 2003, 10,000 patients used cannabis obtained via illegal ways for difficult to treat, severe diseases. By legalizing the use of medicinal cannabis, it is anticipated that the use via illegal ways will decrease. The objective of this study was to get insight in the characteristics of patients that use medicinal cannabis from the pharmacies, as well as the symptoms and diseases cannabis is prescribed for.

## Methods

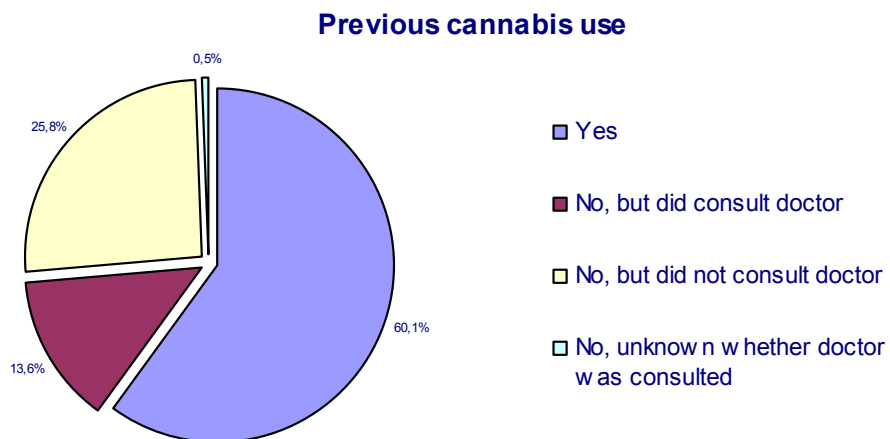
Patients who were prescribed medicinal cannabis were contacted by their pharmacist and asked to fill out a questionnaire. The questionnaire contained items about characteristics of the patient, symptoms and diseases, prescription and use of cannabis, and experiences with other cannabis products. Furthermore, history of drug use in the period of six months before the legislation of cannabis was studied using drug history information of the patients from the pharmacy.

## Results

In total 200 patients returned a questionnaire in the study period September 2003- January 2004. Two-third of the respondents was female, and none of the respondents was younger than 30 years (see Figure 1). Figure 2 shows that a majority of respondents (60.1%) already used cannabis before September 2003.

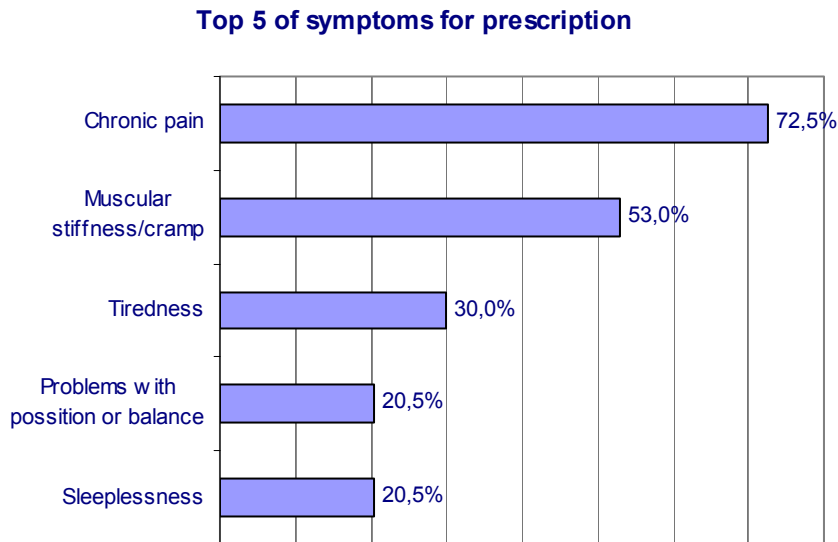


**Figure 1 a-b** Gender and age distribution of the respondents (N = 199)

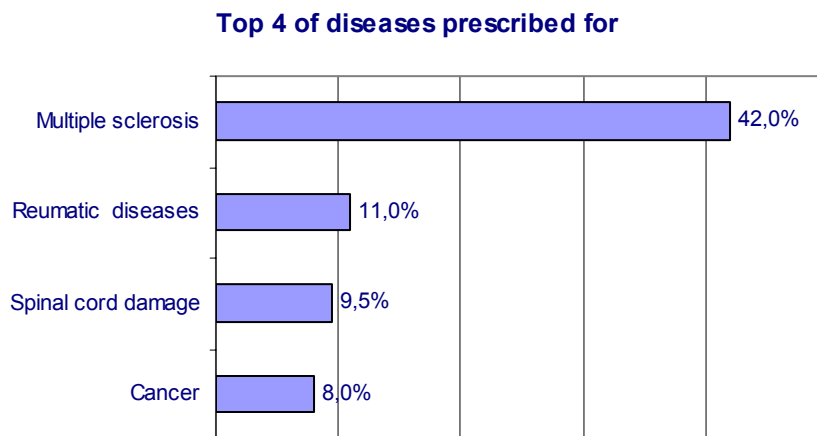


**Figure 2** Previous use of cannabis (N =199)

Cannabis was mainly used for chronic pain and muscle cramp/stiffness (see Figure 3). Among the cannabis users, 42.0% suffered from multiple sclerosis and 11.0% was diagnosed with rheumatic diseases (see Figure 4).



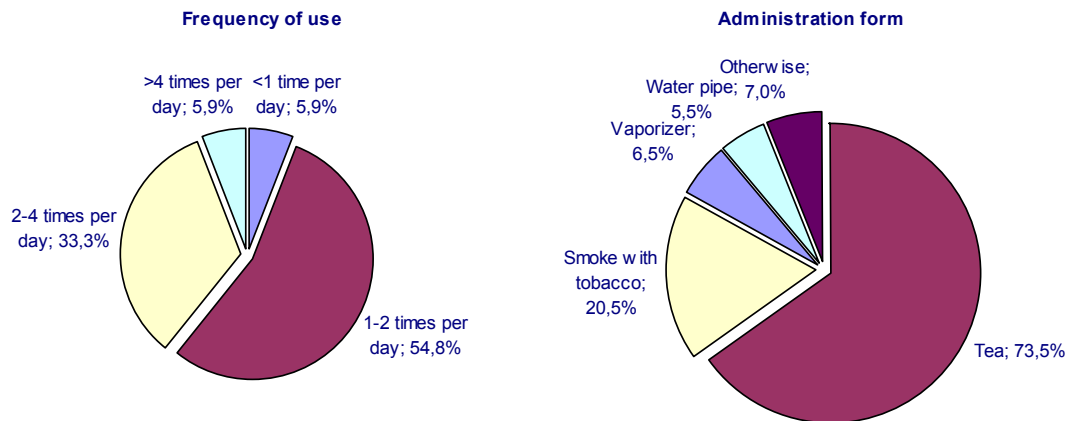
**Figure 3** Symptoms for prescription of cannabis (largest categories are shown) (N = 200)



**Figure 4** Major indications for cannabis use (largest categories are shown) (N = 200)

In the pharmacies, two varieties of cannabis are available that can be consumed in different ways. In Figure 5, the frequency per day and administration form of cannabis use are shown. Over 70%

of the respondents indicated to consume cannabis as tea, while only one-fifth of the patients smoked the cannabis. Frequency of use was most often one to four times daily.



**Figure 5** Administration form (N = 200) and frequency of cannabis use per day (N = 186)

For 175 of the 200 respondents, the drug history was available and showed a relatively frequent use of analgetics (36.6%), psycholeptics (34.9%) and anti-inflammatory and anti-rheumatic drugs (26.9%). The respondents indicated that previous use of other cannabis products (*i.e.* before September 2003) decreased concomitant drug use in 40.4% of the patients, remained the same in 48.6% and increased in 0.9% of the patients; 10.1% did not use any concomitant drugs.

## Conclusions

The results of the study indicate that legalization of medicinal cannabis did not cause an excessive increase of cannabis use in the Netherlands. The results also show that cannabis use was restricted to the indications recommended by the government. The main indications for prescription of medicinal cannabis were chronic pain and muscle cramp/stiffness, whereas multiple sclerosis was the most frequently reported disease. As yet legalisation of medical cannabis did not lead to unwanted situations. The suggestion that the use of concomitant drugs may be decreased by the use of cannabis shows moreover a positive effect of the use of medicinal cannabis. Further research is needed to get more detailed insight into the effectiveness of cannabis and the role of concomitant drugs.

The complete results of this study can be found in the Dutch study report at the PHARMO website ([www.pharmo.nl](http://www.pharmo.nl)).

### **Contact PHARMO Institute:**

Email: [pharmo@pharmo.nl](mailto:pharmo@pharmo.nl)

Telephone: +31 30 2345 620

Location: Papendorpseweg 65, 3528 BJ Utrecht, The Netherlands

Postal address: P.O. Box 85222, 3508 AE Utrecht, The Netherlands

[www.pharmo.nl](http://www.pharmo.nl)

## Co-medication of cannabis users

### Introduction

In June 2004 the PHARMO Institute published a report, titled '*Medicinaal gebruik van Cannabis*', carried out for the 'Bureau Medicinale Cannabis' of the Dutch Ministry of Health. One interesting result was that some patients who had used cannabis products before the official introduction in september 2003 said that they could decrease the use of other medication.

The aim of this study was to analyse whether and to what extent the start of medicinal cannabis use led to a decreased use of concomitantly used co-medication.

### Methods

#### *Selection of cases and controls*

Patients using analgesics (ATC-code N02, (except N02C), M01 or M02) during september 2002 until november 2004 were selected from the PHARMO database. Subsequently, they were divided into a group of cannabis users (cases) or no-cannabis users (controls). Only cases and controls who used analgesics at the start of cannabis were included. Cases were matched with controls (ratio 1:10) by age, sex and use of analgesics at index date. The indexdate was defined as the date of start of cannabis use (cases) or a randomly assigned date (controls). Cases and controls were followed as long as they were present in the database but with a maximum period of one year before the index date until one year after this date.

#### *The use of analgesics*

Analgesics were divided into three classes, based on the WHO pain ladder

[<http://www.who.int/cancer/palliative/painladder/en/>]:

- ATC-codes M01, M02 and N02B were defined as non-opioids;
- ATC-codes N02AA59, N02AC04, N02AE01, N02AX02 and N02AX52 were defined as weak-opioids;
- ATC-codes N02AA01, N02AA05, N02AB03 and N02AC03 were defined as strong-opioids.

#### *Analyses*

General characteristics of cases and controls were analysed using descriptive statistics (age and sex).

The use of different classes of analgesics was assessed in two separate time periods of 90 days during follow-up: before the index date (day -90 to -1) and after the index date (day 90 to 180). Next, the use of analgesics was compared between cases and controls by conditional logistic regression using SAS Enterprise Guide V2.0.

## Results

In total, 80 patients used analgesics at the start of cannabis. 79 could be matched to in total 746 controls. General characteristics of cases and controls were analysed at index date (table 1).

Table 1 General characteristics of matched cases and controls

Characteristic	Matched cases		Matched controles	
	n	%	n	%
Total	79	100	746	100
Ageclass				
<30	1	1.3	10	1.3
30-39	6	7.6	60	8.0
40-49	13	16.5	119	16.0
50-59	14	17.7	140	18.8
60-69	20	25.3	181	24.3
70-79	18	22.8	180	24.1
>79	7	8.9	56	7.5
Sex				
female	53	67.1	495	66.4
male	26	32.9	251	33.7

The use of analgesics by cases and controls was compared during two different time periods (table 2).

Table 2 Comparison of use of analgesics by cases and controls

Class of analgesics	Period related to start cannabis use	Cases		Controls		HR	CI	
		n	%	n	%		lower	upper
non opioids	before	64	82.1	589	79.9	1.3	0.54	3.11
	after	33	76.7	274	69.5	1.47	0.65	3.33
weak opioids	before	41	52.6	322	43.7	3.49	1.47	8.26
	after	17	39.5	97	24.6	3.49	1.31	9.3
strong opioids	before	18	23.1	124	16.8	6.79	1.52	30.36
	after	12	27.9	42	10.7	10.68	2.89	39.49

### Conclusions

Cases and controls were comparable on age and sex (table 1).

No significant differences in the use of the three classes of analgesics (non-opioids, weak-opioids and strong opioids) could be found between cases and controls (table 2). The large confidence intervals, due to small numbers of cases who could be included, might play an important role.