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Impact of coaching by community pharmacists on drug attitude of depressive primary care patients and acceptability to patients; a randomized controlled trial

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Abstract

Objective: To investigate whether an intervention by Dutch community pharmacists improves the drug attitude of depressive patients, who are prescribed a nontricyclic antidepressant by their general practitioner (GP). *Method:* A randomized controlled trial with a 3-month follow-up was conducted among consecutive general practice patients who go to 19 pharmacists for antidepressants. The trial consisted of a control group ($n=79$) that received usual care and an intervention group ($n=69$) that received three drug coaching contacts at the pharmacy and a 25-min take-home video on the background of depression and the effects of medication. *Outcome measure:* Drug attitude (DAI). *Results:* At the baseline measurement there were no significant differences between the intervention and control group on any demographic and health status variables or on clinical symptoms. At the 3-month follow-up intervention patients had a better drug attitude ($P=0.03$) than their controls and evaluated the coaching of their pharmacist as more positive. They also felt the video to be useful. It had changed their ideas about medication. *Conclusions:* Coaching by community pharmacists is an effective way to improve drug attitude of depressive primary care patients and it is acceptable to them.

Keywords: Randomized controlled trial; Depressed primary care patients; Drug attitude; Coaching by community pharmacists

1. Introduction

Although antidepressants (ADs) are effective medication against depressive disorders, many patients have a negative attitude towards ADs. This may cause nonadherence (Agras, 1989). Naturalistic data suggest that between 30 and 60% do not take their ADs as prescribed (Cramer, 1995; Demyttenaere, 1997; Vergouwen et al., 2002). Positive expectations and beliefs in the benefits and efficacy of treatment have been shown to be essential to patient adherence (DiMatteo et al., 2000). It is believed that drug coaching by informing patients on what (side)-effects they can expect can contribute to improved drug attitude (Priest et al., 1996). Being gatekeepers of the specialized health care is a considerable task for general practitioners (GPs) (Boerma and Fleming, 1998), which limits their time in drug coaching of depressive patients. It is quite possible that GPs lack time to offer their patients appropriate drug coaching. In a review of studies on the relation between depression and patient adherence, regardless of what class of medication was used, DiMatteo et al. (2000) found that, compared with nondepressed patients, depressed patients are three times more likely to be noncompliant with treatment recommendations. We hypothesized that if community pharmacists gave adequate written, oral and visual information to depressive primary care patients, their drug attitude would be enhanced in a positive direction and their adherence to medication would therefore improve. To our knowledge little or no attention

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is paid to the pharmacy as a setting for drug coaching of patients with ADs. In the Netherlands, community pharmacies are implementing three new tasks, viz. medication monitoring, informing prescribing physicians and patient medication education. The education of pharmacists and assistants includes communication skills (Pronk et al., 2002). In the pharmacists' 6-year university curriculum, communication skills are taught in the 5th and 6th year. In so-called postgraduate pharmacist registration courses, attention is given to pharmaceutical care aspects such as communication with patients. Pharmacy assistants receive training in communication skills in their 3-year vocational training course. Communication is trained weekly through out the curriculum, totalling at least 240 student hours. In the first year, basic principles of verbal and nonverbal communication are emphasized. In the second year a 'conversation' module is taught and a 'practice training' integrates various subjects in the third year. For both pharmacists and assistants, postgraduate courses on communication and drug knowledge are available. Hence, community pharmacists are well equipped and well trained to provide drug coaching to patients. Since most patients in the Netherlands visit only one pharmacy, pharmacists can easily monitor patients. There is little 'shopping' or switching between pharmacies. Pharmacies have more time to provide coaching to depressive patients. Despite these advantages it is unclear whether pharmacies are able to effectively offer an educational package to patients and whether this improves drug attitude. It is uncertain if the pharmacy is an acceptable setting to patients for such a package.

The objective of this randomized controlled trial (RCT) was to investigate whether an intervention of community pharmacists would influence drug attitude of depressive primary care patients in a positive direction.

2. Experimental

2.1. Design

A randomized controlled trial with a follow-up at 3 months was conducted among consecutive patients who attended the pharmacy for nontricyclic antidepressants. All of these patients participated in a larger randomized controlled trial that assessed the effects of a coaching program by community pharmacists designed to improve adherence. The trial consisted of two arms (usual care and extra care). Neither patients nor pharmacists were blinded for group assignment

2.2. Setting and subjects

From April 2000 up to April 2001 a total of 19 pharmacists each sought informed consent of 10–14 consecutively attending patients. The enrolment period varied between 3 and 12 months. Inclusion criteria for patients were: (1) 18 years old or over; (2) coming to the pharmacy with a 'new' prescription from their GP for a nontricyclic AD medication, i.e. not having used an antidepressant in the 6-month months before the inclusion. This was checked in the pharmacy records; (3) the ability to understand and complete the Dutch questionnaires and (4) taking the antidepressants in relation to depressive complaints. The pharmacists provided oral and written information about the study to eligible patients and asked written informed consent of patients. The prescribing GPs were asked to complete and return a brief questionnaire to provide the primary diagnosis, its severity and possible comorbidity.

Study subjects were rewarded €10 for completing all questionnaires from baseline to follow-up. The pharmacists received €30 for each patient they enrolled in the study.

The RCT was approved by the medical–ethical committee of the University Medical Centre Utrecht.

2.3. Baseline and follow-up after 3 months

The participating patients of both arms received their medication at the pharmacy and filled out the self-rating questionnaires at the baseline measurement and at 3-month follow-up, and sent the questionnaires in reply envelopes to the research institute.

2.4. Randomization

Randomization occurred on a patient level and on a one-to-one ratio using block randomization to ensure equal numbers of intervention and control patients per pharmacy. The data administration forms of the whole sample were randomized before delivery to the pharmacies. These forms were precoded and delivered in sealed envelopes. After receiving written informed consent from the patient, the pharmacist learned which group the patient was assigned to by opening the envelope.

2.5. Intervention

The pharmacists provided two distinct service packages: usual care and extra care.

Patients in the control group received the usual oral and written information when they picked up their prescriptions at the pharmacy.

Patients assigned to the extra care group had three coaching contacts during the study. For the se coaching contacts the patients were invited into a separate room to discuss their medication use in private. In a few cases the assistant attended to the patients because the pharmacist was busy. At first contact they were informed about the appropriate use, the beneficial as well as the side effects of the medication. The pharmacists were asked to use a list of

important themes (Lin et al., 1995; Nierenberg, 1999) to discuss with the patients

1. Take the medication daily
2. Take the ADs for 2–4 weeks for a noticeable effect
3. Continue to take the medicine even when feeling better
4. Do not stop taking ADs without checking with the physician
5. Do not hesitate to ask the pharmacist or the GP if you have questions regarding ADs.

To improve their knowledge and attitude towards taking their ADs the patients received a take-home video. Both intervention and control patients received the usual printed material on ADs. The 25-min videotape was made by the study team and reviewed the multifactorial origin of depression, the relationship to stress, physical and emotional symptoms, how medication and psychotherapy can relieve depression and the importance of medication adherence.

The second contact took place 2 weeks before their first prescription term ended, the third at 3 months from baseline. During the second visit the pharmacist asked the patient whether he/she had experienced adverse or positive effects. In both cases patients were stimulated and motivated to continue to take their ADs in order to decrease the risk of a relapse. This procedure was repeated during the third visit. At the 3-month follow-up all patients (i.e. control and intervention arm) filled out the self-rating questionnaires again, including questions on drug attitude, and were asked to evaluate their contacts with the pharmacist.

2.6. Outcome measures

2.6.1. Primary outcome

The primary outcome of this study was the attitude of depressed patients towards medication measured at the 3-month follow-up.

Drug attitude was measured by the self-rating Drug Attitude Inventory (DAI), a 30-item dichotomous answer scale (Awad, 1995; Hogan et al., 1983) (see Appendix A). The DAI scale predicts drug compliance and was originally constructed on schizophrenic patients' self-reports of their experience of neuroleptic treatment. The internal consistency of the DAI was found to be high (0.93) just like the test–retest reliability (0.82). The scale consists of 30 preset questions in seven categories: subjective positive, subjective negative, health/illness, physician, control, prevention and harm. Two members of the team translated the original version into Dutch independently of each other. In a consensus meeting the final Dutch DAI was established. To serve the study one original item was changed. In item number 4 the hospital setting was replaced with an ambulatory one. The internal consistency of the DAI in our study was 0.85, which only is slight lower than in the study of Awad (1995).

2.6.2. Other measures

At baseline measurement depressive symptoms were measured by the subscale of the self-rating Hopkins Symptom Checklist (SCL-13) (Derogatis et al., 1986). The depression dimension of the SCL contains thirteen items. Each item is scored on a 5-point scale: 0=not at all; 1=a little bit; 2=moderately; 3=quite a bit; 4=extremely. Reliability of the SCL is high. Internal consistency and the test–retest reliability of the subscale are both 0.90 (Derogatis et al., 1986). The internal consistency of the SCL-13 in our study was 0.88, which is somewhat lower than in the study of Derogatis et al. In the self-rating questionnaire patients were asked to give their opinion about drug coaching by the pharmacist and about the take-home video.

Demographic variables were seen as potential effect modifiers. Demographic variables included age, gender, marital status, education, work situation, income, severity of depression as assessed by the GP, number of previous episodes of antidepressant use and/or of depressive complaints.

2.7. Data analysis and power calculation

Using the software programme SPSS-10 (10) (SPSS, 2000) and the DAI-30 as dependent variable we performed a χ^2 analysis on categorial variables, Spearman's correlation on ordinal variables, a nonparametric test for skewed variables (Mann–Whitney) and we calculated the effect size of the intervention (Cohen's d and effect size r). In our original study the primary outcome measure was adherence to ADs. In a total sample size of 150 subjects a difference of 13% in adherence was feasible at a significance level of 0.05 (two-sided), with a probability of 80% and assuming a standard deviation (S.D.) in adherence of 40%. We assumed the same significance level, probability and S.D. to detect a difference in drug attitude of 13%.

3. Results

3.1. Subjects

Of 46 pharmacists who were approached in 1999 to participate in the study, 20 declined. Reasons for not participating were the following: no time (n=15), not enough assistants (n=3), GPs would be annoyed (n=1) and coaching of patients cannot be combined with daily practice (n=1). Of the 26 pharmacists who initially agreed, seven of them stopped shortly after the start of the study; one because GPs refused to let their patients participate, two because of a prolonged sick leave, two because they did not have the time after the departure of assistants and

two became demotivated because several eligible patients refused to participate. During the enrolment the 19 pharmacists included a total of 151 patients of whom 70 (47%) were randomized to the intervention arm and 81 (53%) to the control group. After the randomization one intervention patient and three controls patients decided not to participate. One patient felt the questionnaire was too long, another had to be admitted to a hospital due to cardiac problems and after seeing the video one patient disagreed with the GP's diagnosis and stopped taking the medication.. The baseline questionnaire was filled out by 135 (92%) of the remaining 147 patients. At the 3-month follow-up 107 (73%) of them (50 intervention and 57 control patients) returned their follow-up questionnaire with the DAI-30.

3.2. Dropouts

'Dropouts' were defined as those patients who did not send back their questionnaire at the 3-month follow-up and 'completers' as those who completed the full 3-month trial and returned their second questionnaire. At 3-month follow-up of the 135 patients who had returned the baseline questionnaires, 28 (21%) were dropouts (see Fig. 1).

Dropouts and completers were evenly distributed on age, gender, marital status, education, work situation, income, severity of depression as estimated by their GPs, on number of previous episodes of antidepressant use, and on receiving a drug coaching or not. There was a significant difference on previous episodes of depressive complaints ($P=0.034$); 67% of the dropouts did not have such an episode versus 42% of the completers.

3.3. Baseline

At the beginning of the randomized trial there were no significant differences between the intervention group and the control group on demographic and health status variables, or on clinical symptoms (van Hout et al., 2001) (Table 1).

Mean age for the whole group was 42 years and 71% of the patients were female. Of the 148 patients the GPs rated 19% mildly, 64% moderately and 17% as severely disordered. On average, patients had experienced two earlier similar episodes of complaints (S.D. 4.5). The mean duration of the current depressive episode was more than 3 years (S.D. 5.9). In the 3 months preceding inclusion, patients called in sick from work on average of 12 days (S.D. 16.7). In general they visited their GP twice (S.D. 2.4) and visited other health professionals four times (S.D. 4.5). The mean item score of both patient arms on the depression subscale was 3.0 (S.D. 0.9).

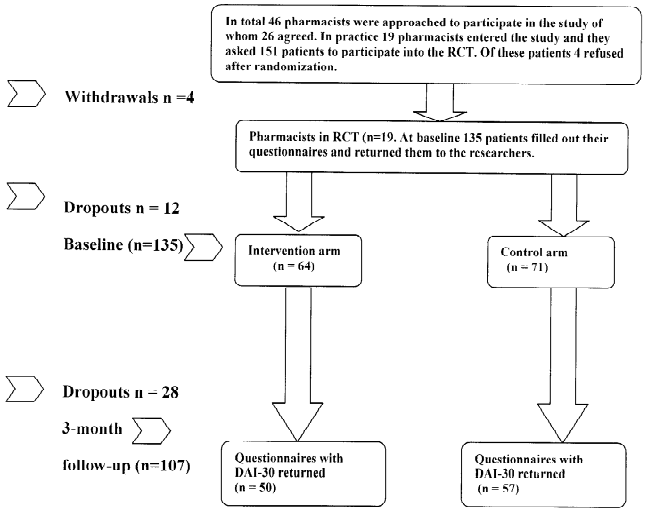

Fig. 1. Randomized controlled trial (RCT) scheme (the CONSORT Statement) (Begg et al., 1996; Moher et al., 2001).

3.4. Differences in drug attitude at 3-month follow-up (DAI-30)

At 3-month follow-up Fig. 2 shows that the intervention patients had a significantly more positive drug attitude [mean number 14.2, standard error of the mean (S.E.M.) 1.4] compared to those in the control group (mean number 9.7, S.E.M. 1.5 (Mann–Whitney $U=1044$, $Z=-2.127$, $P=0.033$).

The effect size of the intervention on drug attitude appeared to be medium (Cohen's $d=0.4$ and effect size $r=0.2$)[1].

Patients in the intervention arm had a more positive drug attitude than the controls (DAI-30 $P\leq 0.05$). On item level the following four attitudes towards drugs showed the strongest differences (see Table 2 and also Appendix A): (1) ''I don't need to take medications once I feel better'' (DAI-1); (2) ''Medication is slow-acting poison'' (DAI-14); (3) ''It is unnatural for my mind and body to be controlled by medication''(DAI-20); (4) ''I cannot relax on medication''(DAI-28). Table 2 shows in detail that the intervention patients had a more positive attitude towards medication on 28 (93%) of the 30 DAI-items. The more positive drug attitude of the intervention arm (i.e. 14%) was also in line with the more positive evaluation of the antidepressants by intervention patients (88 versus 66%) ($\chi^2=11.533$ df 4, $P=0.02$).

3.5. Patient' opinions on drug coaching by pharmacists

At the 3-month follow-up, patients of both arms were asked to give their opinion about the contacts with the pharmacist. Table 3 shows that as to the guidance provided by their pharmacist, intervention patients were significantly more positive than the controls ($P<0.001$), regarding the

[1]Cohen's $d=M_1-M_2/\sigma_{\text{pooled}}$ where $\sigma_{\text{pooled}}=\sqrt{[\sigma_1^2+\sigma_2^2/2]}$; effect size $r_{\gamma\lambda}=d/\sqrt{(d^2+4)}$.

Table 1
Demographic and clinical characteristics in the intervention ($n=64$) and control arm ($n=71$) with depression[a] at baseline measurement

	Intervention ($n=64$)	Controls ($n=71$)	df[b]	Test	P value
Female	70%	72%	1	χ^2	0.772
Age (years)	43±13	42±19	5	τ	0.426
Severity of symptoms			2	χ^2	
Mild	18%	19%			
Moderate	66%	64%			
Severe	16%	17%			
Marital status			3	χ^2	0.152
Unmarried/single	19%	28%			
Married/living together	73%	56%			
Divorced	6%	9%			
Widowed	2%	7%			0.407
Life/working situation			5	χ^2	
Paid work	62%	64%			
Voluntary work	5%	–			
Domestic work	11%	16%			
Pensioner	8%	7%			
Unemployed/incapable working	14%	13%			
Month income			5	χ^2	0.763
<$680	36%	28%			
$680–$1000	31%	28%			
$1000–$1320	17%	24%			
$1320–$1640	9%	12%			
>$1640	7%	8%			
Level of education (diploma)			5	χ^2	0.376
No education (not finished)	7%	1%			
Primary school	8%	10%			
10 years of education	27%	24%			
14 years of education	31%	40%			
16 years of education	27%	25%			
Health status (in groups)					
Months of depressive complaints	31±64.8	49±87.2	127	τ	0.169
Number previous episodes use of AD	0.35±0.86	0.23±0.49	131	τ	0.380
Number previous episodes similar complaints	1.5±3.1	2.5±5.5	123	τ	0.197
Number of cigarettes a day	8±9.8	8±10.8	130	τ	0.880
Alcohol units in 1 week	4±5.0	5±7.8	132	τ	0.444
Lost labour days last 3 months	11.6±18.2	11.6±15.3	85	τ	0.992
Clinical characteristics					
SCL-Depr. (total number)	40±12	38±11		τ	
(mean SCL-Depr.-items)	(3.1±0.9)	(2.8±0.8)	131		0.160

Values are mean±S.D.; AD, antidepressants.
[a] SCL Hopkins Symptom Checklist.
[b] Degrees of freedom.

clear explanation of the ADs ($P<0.001$), regarding the active role ($P=0.016$), the direct contact ($P=0.045$), and the helpfulness of the coaching in taking ADs ($P<0.001$). Most of the intervention patients would recommend drug coaching by pharmacists to other depressive patients ($P<0.001$).

3.6. Evaluation of depression video

At 3-month follow-up, 2 (5%) of the 45 intervention patients had not looked at the video on depression and 13 (32%) of the remaining 43 patients watched it more than once. Nearly all of the patients (97%) found the video to be clear, 95% found it to be informative, 90% of the patients felt that the effects of ADs were clearly explained, 74% said the video corresponded with their own image of depression, 59% reported the video had been helpful in starting the use of ADs, 46% said the video had changed their ideas about medication and 39% said the video had changed their ideas on depression and 84% of the patients

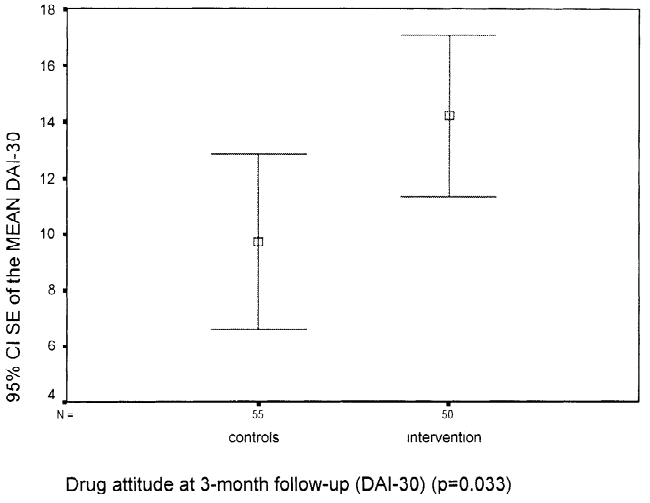

Fig. 2. Difference in drug attitude (DAI-30) at 3-month follow-up of the intervention ($n=50$) and the control arm ($n=55$).

would recommend the video to other patients. Further analyses showed that 42% of the patients who reported that the video had changed their ideas about medication, had a positive drug attitude versus 16% who had not changed their ideas. This difference was significant ($\chi^2=4.714$, df 1, $P=0.03$).

Table 2
Positive drug attitude[a] of intervention ($n=47$) and control patients ($n=54$) (DAI-30)[b]

	Intervention (%)	Control (%)	DF[2]	χ^2	*P* value
DAI-1[a]	77	57	1	4.246	0.039
DAI-2	85	80	1	0.379	0.538
DAI-3	81	74	1	0.740	0.390
DAI-4	36	30	1	0.433	0.510
DAI-5	92	92	1	0.008	0.927
DAI-6	57	45	1	1.493	0.222
DAI-7	51	61	1	0.939	0.333
DAI-8	98	90	1	2.508	0.113
DAI-9	83	72	1	1.665	0.197
DAI-10	68	55	1	1.791	0.181
DAI-11	70	65	1	0.337	0.561
DAI-12	72	65	1	0.553	0.457
DAI-13	85	88	1	0.208	0.648
DAI-14[a]	89	71	1	5.307	0.021
DAI-15	55	41	1	1.960	0.161
DAI-16	92	77	1	3.707	0.054
DAI-17	87	75	1	2.534	0.111
DAI-18	60	55	1	0.281	0.641
DAI-19	98	94	1	0.919	0.338
DAI-20[a]	79	49	1	9.286	0.002
DAI-21	62	54	1	0.589	0.443
DAI-22	53	45	1	0.641	0.423
DAI-23	61	49	1	1.354	0.245
DAI-24	77	61	1	2.872	0.093
DAI-25	98	90	1	2.508	0.113
DAI-26	72	60	1	1.773	0.183
DAI-27	81	78	1	0.088	0.767
DAI-28[a]	94	73	1	7.527	0.006
DAI-29	68	61	1	0.568	0.451
DAI-30	53	47		0.368	0.544

[a] Positive evaluation $P \leq 0.05$.
[b] See Appendix A.

4. Discussion

The objective of this randomized controlled trial (RCT) was to investigate whether an intervention by community pharmacists would influence drug attitude of depressive primary care patients in a positive direction. Our study showed that at the 3-month follow-up intervention patients had a more positive drug attitude than the controls. We found a medium effect size. Secondly, intervention patients evaluated the coaching by their pharmacist as positive. Thirdly, intervention patients experienced the video as informative and they would recommend it to other patients.

This leads to the following conclusions:

1. Drug coaching by pharmacists has a positive effect on patients' drug attitude. Mainly because the pharmacist is able to systematically monitor the GPs' prescriptions and patients' medication use, as primary care patients rarely change pharmacies in practice. In this way, coaching by pharmacists improves the continuity of pharmaceutical care and enables quality assurance of medication prescriptions. For example, Zermansky et al. (2001) found that clinical pharmacists can conduct effective consultations with elderly patients in general practice to review their drug use. Such reviews resulted in significant changes in patients' drugs and saved more than the cost of the intervention without affecting the workload of GPs.
2. Depressive primary care patients with an AD prescription of their GP are willing to comply with medication advice given by pharmacists. Considering the fact that in Europe and in The Netherlands especially, GPs serve more and more as gatekeepers to specialized care (Boerma and Fleming, 1998) and have less time to provide drug coaching, pharmacists can reduce their burden. Community pharmacists are willing and able to coach patients in drug use.
3. A take-home informative video is effective in terms of influencing patients' ideas about medication and is an easy to use instrument as the patient can watch it at convenience.
4. Effects of an intervention to improve drug attitude of depressed primary care patients can be measured by the DAI

5. Limitations

There are some limitations to this study. Neither patients nor pharmacists were blinded for group assignment. Pharmacist and patient expectation may have affected the

Table 3
Evaluation of pharmacists' coaching by intervention ($n=47$) and control patients ($n=54$) with depression at 3-month follow-up

	Intervention (%)	Control (%)	DF	χ^2	P value
Guidance*	96	73	1	10.185	0.001
Explanation (side)effects*	100	80	1	11.170	0.001
Appreciation active role of pharmacist*	82	61	1	5.784	0.016
Appreciation direct contact with pharmacist	86	70	1	4.035	0.045
Helpful in taking drugs*	86	52	1	14.193	0.001
Recommendation coaching to other patients*	86	54	1	12.956	0.001

*, Positive evaluation $P \leq 0.05$; Degrees of freedom.

results, but to what extent we do not know. This may have caused a Hawthorne effect (Franke et al., 1998). The Hawthorne effect states that, by merely participating in a trial the patients have a better experience because they feel they get attention, which is gratifying to them and rewarding in itself. If so, the effect on drug attitude may in fact be an underestimate of how successful the intervention really was.

As to the feasibility of coaching by pharmacists in order to improve drug attitude, only one pharmacist who refused to participate gave a reason that implied a structural impediment to its implementation. In his view the intervention did not fit in the daily routine. In The Netherlands most of the community pharmacists have implemented patient education (Pronk et al., 2002), and we are therefore optimistic about the feasibility of pharmacists' coaching.

The original drug attitude inventory was developed in another setting and with another population. Some items were obviously formulated for neuroleptic users (''I feel weird, like a 'zombie' on medication'') in a hospital (''Even when I am in hospital I need medication regularly''). We adjusted the DAI so it could be used in a depressed population, and we carried out a reliability analysis using Cronbach's α. Cronbachs α is a coefficient that describes how well a group of items covers a single idea or construct, the so-called inter-item consistency. We found a high internal consistency for the DAI-30 in our population of depressed primary care patients.

In our study dropouts had experienced less previous episodes of depressive complaints than completers of the trial. We did not examine how many of these dropouts had stopped taking their ADs because of an inappropriate drug attitude.

A remark regarding the diagnosis of depression as made by a GP: it is possible that patients who were not exclusively depressive, were included in the trial. The pharmacist delivered the AD as prescribed by the GP and did not check whether the diagnosis of depression was valid. It is therefore possible that the pharmacological therapy was not limited to depressive patients although the video was made for patients with depressive complaints. We do not know the impact of the video compared to the pharmacist contacts and which elements of these two components contribute to a positive drug attitude, begging the question whether both elements were required. As to the contacts, the pharmacists were asked to use a list of important issues to discuss with the patients. However, we did not measure the quality of each of these contacts and whether the information was conveyed correctly. In a future study it would be interesting to examine whether a minimal trial, e.g. either a video or contacts, would lead to comparable outcomes.

It is uncertain whether GPs regard drug coaching as task for the pharmacist. It is possible that it is seen as an infringement on the practitioner's autonomy or authority and of the privacy of the patient. However, we remain optimistic, as most of the GPs, who were approached to participate in the study, allowed their patients take part. A systematic review of randomized controlled trials by Haynes et al. (1999) showed that even the most effective interventions to help patients follow-up prescriptions of medications did not lead to substantial improvements in adherence and treatment outcome. They recommended developing innovative approaches to assist patients to follow treatment prescriptions. Still, the review of Haynes et al. (1999) warrants a remark. In their review they did not include antidepressant trials because of narrow criteria e.g. at least 6 months follow-up from the time of patient entry and patients with major disorders excluding depression. A systematic review of controlled trials with antidepressants (Vergouwen et al., 2002) revealed that interventions in patients with major depression had modest but significant effects on adherence and on clinical symptoms.

Our study showed that pharmacists are capable of coaching each patient along with surveillance of continued refills of prescribed medication by the GP. In daily practice the intensity of the contacts can vary in time and per patient, the pharmacist's busy schedule may make it difficult to make follow-up appointments and, last but not least, the pharmacy setting may hamper an intimate, confidential conversation. Whether it is the pharmacist or his assistant, in our view it is important that in the first contacts educational messages associated with better adherence are given during the first month of antidepres-

sant treatment. These messages are aimed at correcting the misconceptions of patients that will most likely adversely impact adherence (Lin et al., 1995; Nierenberg, 1999). In our trial, pharmacists did deliver such messages and they were also on the videotape. In conclusion, coaching by community pharmacists can be regarded as a new fruitful approach to improving drug attitude of depressive patients.

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Appendix A

Drug attitude inventory (DAI-30)* (11)

	Question	Response
1	I don't need to take medications once I feel better	T/F
2	For me the good things about medication outweigh the bad	T/F
3	I feel weird, like a 'zombie' on medication	T/F
4	Even when I'm not in hospital I need medication regularly	T/F
5	If I take medication it's only from because of pressure from other people	T/F
6	I am more aware of what I am doing, of what is going on around me, when I am on medication	T/F
7	Taking medication will me do no harm	T/F
8	I take medication on my own free choice	T/F
9	Medication make me feel more relaxed	T/F
10	I am no different on or off medication	T/F
11	The unpleasant effects of medication are always present	T/F
12	Medication makes me feel tired and sluggish	T/F
13	I take medication only when I am sick	T/F
14	Medication is slow-acting poison	T/F
15	I get along better with people when I am on medication	T/F
16	I can't concentrate on anything when I am taking medication	T/F
17	I know better than the doctor when to go off medication	T/F
18	I feel more normal on medication	T/F
19	I would rather be sick than taking medications	T/F
20	It is unnatural for my mind and body to be controlled by medication	T/F
21	My thoughts are clearer on medication	T/F
22	I should stay on medication even if I feel all right	T/F
23	Taking medication will prevent me from having a breakdown	T/F
24	It is up to the doctor when I go off medication	T/F
25	Things that I could do easily are much more difficult when I am on medication	T/F
26	I am happier, feel better, when taking medications	T/F
27	I am given medication to control behaviour that other people (not myself) don't like	T/F
28	I can't relax on medication	T/F
29	I am in better control of myself	T/F
30	By staying on medication I can prevent getting sick	T/F

*, Using the DAI-30 in a population of depressed primary care patients we found a Cronbach's α of 0.857.

Scoring DAI-30: The scale has 15 items that are scored as True and 15 as False if the person is fully compliant (positive subjective response). 'Positive' answers are scored as follows and score as plus one:

1 F	11 F	21 T
2 T	12 F	22 T
3 F	13 F	23 T
4 T	14 F	24 T
5 F	15 T	25 F
6 T	16 F	26 T
7 T	17 F	27 F
8 T	18 T	28 F
9 T	19 F	29 T
10 F	20 F	30 T

'Negative' answers score as minus one e.g. a circle around the above letters counts as plus one (e.g. a circle or a tick on the F of question will score plus one, a circle or a tick on the T of question one will score minus one). The final score for each person at each time is the positive score minus the negative score. A positive total final score means a positive subjective response (compliant). A negative total score means a negative subjective response (noncompliant).

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