

Benzodiazepine Prescriptions and Therapist Non-compliance

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Summary. In an investigation of benzodiazepine (BDZ) prescription patterns, psychiatrists in private practice were found to exhibit “therapist non-compliance” with regard to general medical recommendations for BDZ use. The findings indicate that BDZ prescriptions in general (53% among patients treated with psychotropics) as well as long-term treatment of patients (37%) are quite common among private practice psychiatrists. BDZ treatment is not restricted to “minor psychiatric disorders”, and contrary to the guidelines, even patients with substance dependence are not excluded. A positive association was found for BDZ use and patients’ self-reported symptoms and health complaints, the number of other medications prescribed and age. In a discussion of therapist non-compliance it is proposed that this may be a consequence of a symptom-based treatment model, individual health concepts, the doctor-patient relationship and physician’s cost-benefit analysis. Thus, psychiatrists’ non-compliance may reflect to some extent a case-oriented treatment rationale.

Key words: Benzodiazepine prescribing – Psychiatric outpatients – Therapist compliance – Disease/symptom model – Cost/benefit analysis

Introduction

Benzodiazepines (BDZ) are the most frequently prescribed psychotropic medication (Schwabe and Pfaffrath 1987); they serve as muscle relaxants, anxiolytics

and tranquillizers, hypnotics and anti-epileptics. Since BDZ have various possible side-effects, there has been much concern about their high rate of prescription as well as their long-term use and the lack of diagnostic specificity in their prescription (Weissman and Klerman 1977; Tyrer 1978; Cooperstock and Lennard 1979; Catalan and Gath 1985)

BDZ prescriptions are considered an inappropriate treatment for certain psychiatric disorders, which instead are thought to be better treated with other psychotropic medications, such as antidepressants or neuroleptics, or with psychotherapy alone. Furthermore, concurrent use of BDZ and antidepressant medications may obscure patient non-response to the antidepressant by suppressing depressive symptomatology.

Most often discussed is the potential for physical BDZ dependence, even when they are given in low doses (Winokur et al. 1980; Tyrer and Owen 1983). While in recent years BDZ prescription rates have been decreasing in the United States and some European countries (Allgulander 1986), long-term use may account for an increasing proportion of all BDZ prescriptions (Marks 1983; Williams 1983). Clearly, duration of use is the major risk factor for tolerance and dependence (Lader and Petursson 1983; Schöpf 1985). Other undesirable drug effects are cognitive and psychomotor impairment (Johnson and Chernik 1982; Brosan et al. 1986; Lucki et al. 1986), which can lead to patient mistakes and accidents (Skegg et al. 1979; Edwards 1981).

Treatment guidelines for BDZ stress that these drugs should be prescribed after careful consideration. The “Ten Commandments” for the correct prescription of BDZ (Pöldinger and Wider 1983), state that BDZ should be prescribed in the lowest possible dose; for a limited time; only in cases in which other treatments are not successful, such as psychotherapy

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or other psychotropic drugs; with non-regular intake regimes and drug holidays as often as possible; with dose reduction, even after the first days of use; and with intensive drug monitoring for patient misuse. While the BDZ treatment guidelines specify many precautions and contraindications, they also offer rather unspecific indications for psychiatric treatment. These comprise symptoms (such as anxiety, sleep disturbances, depression-related symptoms) and unspecific diagnoses from the "minor psychiatric" category, such as neurotic or psychosomatic disorders (Pöldinger and Wider 1983).

Despite the considerable criticism of rates and duration of BDZ prescriptions, there is only minimal scientific knowledge of the variables which may influence physicians' prescription behaviour, such as symptoms and diagnoses (Overall et al. 1976; Raynes 1979; Clare and Williams 1981), patient characteristics (Cooperstock 1971; Radelet 1981; Wells et al. 1985), the doctor-patient interaction (Cartwright 1974), or even physicians' characteristics (Mendel 1967; Melville 1980). The need for further exploration of physicians' prescription decisions provided the impetus for the present study, in which we studied private practice psychiatrists' prescription patterns for psychotropic medications.

In this report, we present data on patients with BDZ prescriptions, examining such variables as duration of treatment, diagnoses and additional medications. These measures also provide information on therapist compliance (Linden 1981). Moreover, patient variables such as self-reported symptoms and health complaints might lead to hypotheses about factors influencing BDZ prescriptions.

Methods

The study was performed by the Collaborative Outpatient Research Group (*Forschungsgruppe Ambulante Therapie*, FAT) at the Department of Psychiatry at the Free University of Berlin. Forty-two psychiatrists agreed to participate, i.e. 58% of all private practice psychiatrists in West Berlin. Included in the study were all patients attending the practices on a certain day who had a psychiatric diagnosis, and who were receiving some kind of psychotropic medication. The given day on which data were collected from each practice was randomly selected.

Measurements. For each patient in the sample, the psychiatrists provided the following information: psychotropic and non-psychotropic medications prescribed (classified by the *Rote Liste*, Bundesverband der Pharmazeutischen Industrie e.V. 1982), dosage

and prescription schedule of medication, psychiatric diagnoses and sociodemographic information. The psychiatric diagnoses (classified according to ICD-9 codes) were grouped into five main diagnostic categories. These include "minor psychiatric disorders" (neuroses, anxiety disorders, personality disorders, psychosomatic syndromes and unspecific depressive syndromes), "schizophrenic psychoses" (schizophrenia, paranoid syndromes and non-organic psychoses), "endogenous affective disorders" (endogenous depression and bipolar affective disorders), "organic syndromes" (such as organic psychoses, dementia and other organic brain dysfunction), and "substance dependence/abuse".

A formal diagnosis of "substance dependence/abuse" may not coincide with the general assessment of "dependence", including psychological dependence on prescribed medications. Therefore, in addition to diagnoses, physicians were further asked to give their general impression of each patient's tendency for dependence, first for BDZ and then for other substances.

Additionally, researchers obtained information from the patients in a semi-structured interview about the duration of BDZ intake, and patients completed the *Beschwerde-Liste* (BL; "list of complaints") symptom check list, forms 1 and 2 (von Zerssen 1986), which measures self-reported symptoms and health complaints. Each form has 24 items and is a self-report, 4-point Likert-type scale, limited by "not at all a problem" and "severe problem"; possible scores range from 0 to 144, with 0 representing no symptoms.

Duration of intake was defined by the number of continuous months the patient was prescribed a medication. Prescriptions less than 3 months were defined as short-term and prescriptions for 3 months or longer as long-term.

Results

Subjects

The total patient population coming to the practices was estimated to be approximately 460 persons. There were 367 patients with a psychiatric diagnosis and receiving psychotropic medications on the "given day" of study. These patients are the main consideration in this study and are referred to as the "patient sample". The number of subjects obtained in each practice ranged from 1 to 23. Age was normally distributed, averaging 52 years (SD 14.8), which is typical of private psychiatric outpatients in Berlin (West) (Linden 1987). Patient gender was 67% female and 33% male, consistent with the typical gender ratio of psychiatric outpatients.

Frequency and Duration of Psychotropic Drug Prescriptions

There were 669 prescriptions of psychotropic drugs distributed among the patient sample ($n = 367$). The pharmacological classes of medications included 34% BDZ, 31% neuroleptics and 30% antidepressants. In addition, all prescriptions were classified into indication categories as defined in the *Rote Liste*. These categories include tranquillizers/anxiolytics (33%), hypnotics (7%), antidepressants (30%) and antipsychotics (30%). Included in the relative percentages of psychotropic medications are 52 single prescriptions containing a fixed combination of BDZ with an antidepressant. Each such prescription was considered as a BDZ tranquillizer as well as an antidepressant, and thus as two separate prescriptions. According to this classification, BDZ prescriptions functioned either as tranquillizers (61%), as tranquillizers in fixed combinations with antidepressants (23%), or as hypnotics (16%).

Within the "patient sample" ($n = 367$), 53% ($n = 193$) had received one or more BDZ prescriptions. Among those 193 patients, 70% ($n = 139$) had used BDZ on a long-term basis and 30% ($n = 58$) on a short-term basis (Table 1). Thus, 37% of the patient sample

had a BDZ long-term prescription. Duration patterns were similar across BDZ indication categories including tranquillizers, fixed combinations with antidepressants, and hypnotics.

Patient Demographics

Patients receiving BDZ ("BDZ patients") were significantly older ($\bar{x} = 54.3$ years; SD 14.5) than patients without BDZ medication ("non-BDZ patients"; $\bar{x} = 49.9$ years, SD 14.8, $T = 2.90$, $P < 0.01$). Within the BDZ group, patients with long-term use were even older ($\bar{x} = 56.8$ years, SD 13.8) than patients with short-term use ($\bar{x} = 48.7$ years, SD 14.6, $T = 3.65$, $P < 0.01$). In the patient population, there was no significant difference in the gender distribution for BDZ patients and non-BDZ patients, or for the short-term and the long-term BDZ patients.

Diagnoses and BDZ Use

Table 2 summarizes the distribution of the patient sample in relation to the diagnostic categories. These diagnoses represent the assessment of the treating psychiatrists and are therefore not directly comparable

Table 1. Benzodiazepine (BDZ) short-term and long-term prescriptions (Rx = 226), described for BDZ functions and BDZ patients

	No. of prescriptions						No. of patients ^a	
	Tranquillizers		Fixed combinations ^b		Hypnotics		Any BDZ	
	Rx	(%)	Rx	(%)	Rx	(%)	<i>n</i>	(%)
Short-term	38	(28)	20	(38)	12	(32)	58	(30)
Long-term	99	(72)	32	(62)	25	(68)	135	(70)
Total	137		52		37		193	

^a For 32 patients having multiple BDZ prescriptions "long-term" means *at least* one long-term prescription, "short-term" means *only* short-term prescriptions

^b Combinations of BDZ (tranquillizers) and antidepressants

Table 2. Distribution of patients in diagnostic categories

Diagnostic category	Patient sample ^a (<i>n</i> = 367)		Patient subsample ^b (<i>n</i> = 305)	
	<i>n</i>	(% of 367)	<i>n</i>	(% of 305)
"Minor psychiatric disorders"	166	(45.2)	139	(45.6)
"Schizophrenic psychoses"	105	(28.6)	90	(29.5)
"Endogenous affective disorders"	82	(22.3)	63	(20.7)
"Organic syndromes"	45	(12.3)	9	(3.0)
"Substance dependence/abuse"	23	(6.3)	4	(1.0)

^a Including 62 patients with multiple diagnoses representing more than one diagnostic category

^b Subsample includes patients with diagnoses representing only one diagnostic category

Table 3. Diagnostic categories and subsample^a: patients with any psychotropic, BDZ, and BDZ long-term prescriptions

Diagnostic category	Patients in subsample with:				
	Any psychotropic <i>n</i>	BDZ prescription		BDZ long-term prescription	
		<i>n</i>	(%)	<i>n</i>	(% of BDZ patients)
"Minor psychiatric disorders"	139	95	(68)	62	(65)
Anxiety ^b	5	5	(100)	3	(60)
Depression ^b	94	59	(63)	36	(61)
Others ^b	33	25	(76)	18	(72)
"Schizophrenic psychoses"	90	16	(18)	13	(81)
"Endogenous affective disorders"	63	39	(62)	28	(72)
"Organic syndromes"	9	5	(56)	5	(100)
"Substance dependence/abuse"	4	3	(75)	2	(67)
Total	305	158	(52)	110	(70)

^aSubsample includes patients with diagnoses representing only one diagnostic category

^bExcluding patients with diagnoses in more than one diagnostic subcategory

ble to standardized diagnostic classifications. However, they represent the physicians' diagnostic views, which are likely to influence their treatment decisions. Physicians could assess a subject as having one or more diagnoses. A description of diagnostic categories including the entire patient sample and also a description of a subsample of patients with diagnoses representing a single diagnostic category is presented in Table 2. In investigating the influence of the diagnosis on the physician's BDZ prescription decision, only those patients with diagnoses in a single category (subsample) were considered.

On the diagnostic level, the effectiveness of BDZ use is well established in "minor psychiatric disorders", especially in anxiety disorders (Greenblatt and Shader 1978; Rickels 1978). However, we found patients with BDZ prescriptions in each of the diagnostic categories, even in the "substance dependence/abuse" group (Table 3). Even the "endogenous affective disorders" were similar to the "minor psychiatric disorders". The proportion of long-term users among BDZ patients was high across all diagnostic categories (between 60% and 100%). However, the small sample of "organic syndromes" and "substance dependence/abuse" patients precludes any confident inference.

Within the "minor psychiatric disorder" category, BDZ prescription rates and duration were consistently high for each of the specific diagnostic subcategories. As the diagnosis of anxiety disorders is rare, comprising only 5 patients in the subsample, it does not account for the high frequency of BDZ prescriptions in the "minor psychiatric disorders" group. However, among the "minor depressed" patients, representing the majority of the "minor psychiatric dis-

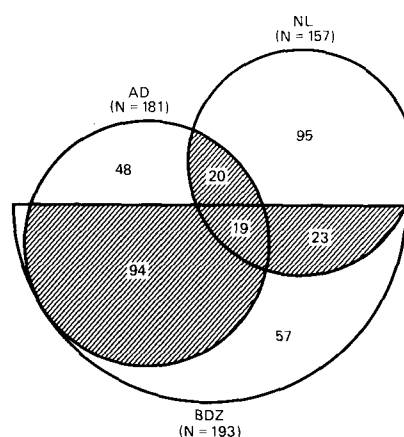


Fig. 1. Polypharmacy in 356 patients with prescriptions of benzodiazepines (BDZ), neuroleptics (NL) and antidepressants (AD). Numbers in figures represent numbers of patients with prescriptions, and overlap of figures indicates polypharmacy

order" category, 63% ($n = 59$) received a BDZ prescription. This rate is similar to that of the "endogenous affective disorders" category.

BDZ and Polypharmacy

Polypharmacy was found to be frequent in the patient sample (see Schüssler and Müller-Oerlinghausen 1984). In fact, over half of the patients were receiving at least two different psychotropic medications on the "given day" of the study. Figure 1 describes the additional prescription of the most frequently used pharmacological classes of psychotropic medications, that is antidepressants, neuroleptics and benzodiazepines.

Patients receiving one or more of these three medication classes comprised 97% of the patient sample, among which 44% were presently receiving prescriptions for two or all three of these medication classes. For the BDZ-treated group ($n = 193$), only 30% ($n = 57$) received the BDZ alone, whereas 59% ($n = 113$) had a combination with antidepressants, 22% ($n = 42$) with neuroleptics, and 10% ($n = 19$) had a combination of all three types of medication. Among the long-term treated "BDZ patients", a slightly higher proportion (73%) had prescriptions of two or more of the three medication classes, compared with the short-term group (66%).

In addition, a comparison of short-term and long-term patients shows that long-term patients received significantly more psychotropic prescriptions of some kind and tended to have more non-psychotropic prescriptions as well (Table 4). Examining the data from another perspective, 62% of the patients with antidepressants and 27% of the patients with neuroleptics also received a BDZ prescription.

Subjective Symptoms

Comparisons were made between patients receiving BDZ and patients receiving non-BDZ medications

Table 4. Present use of any medical prescription (Rx): comparison of short-term and long-term benzodiazepine patients

	Short-term ($n = 58$) Rx per patient		Long-term ($n = 135$) Rx per patient	
	\bar{x}	(range)	\bar{x}	(range)
Psychotropic medications	1.7	(1–4)	2.1*	(1–5)
Non-psychotropic medications	0.8	(0–6)	1.2	(0–10)
All medications	2.5	(1–9)	3.3*	(1–12)

* Mann-Whitney U-test, $P < 0.01$

only. The average BL score for patients receiving only non-BDZ medications was 37.0, while the average score for BDZ patients was 48.4. Thus, we found that BDZ patients had significantly more or more severe of symptoms ($T = 4.4$, $P < 0.01$). While BDZ patients were older than non-BDZ patients, further analysis controlling for the effect of age still found a significant difference between the BDZ and non-BDZ patient groups (ANOVA, $F = 7.2$, $P < 0.001$).

Prescription Schedule

Prescription schedules were obtained for 181 of the 193 BDZ patients (Table 5). Among these 181 patients, there were 210 BDZ prescriptions (Rx), for which 81% ($Rx = 170$) had a regular daily intake schedule and 19% ($Rx = 40$) were "as needed", thus at the patient's discretion and typically not on a daily basis. The time specified in prescriptions for the intake of BDZ reflects, in part, the intended function of the medication. Among the prescriptions with a regular daily intake schedule, 41% of the BDZ were administered exclusively for night time use (100% of the BDZ hypnotics, 51% of the tranquilizers, and 27% of the fixed combinations of BDZ and antidepressants). Among patients rather than prescriptions, 46% of the daily users took BDZ at bedtime only, which means, for the most part, to initiate or maintain sleep.

Substance Dependence and BDZ Use

Medical recommendations for BDZ prescriptions stress above all the exclusion of patients with substance dependence or abuse. Nevertheless, physicians themselves classified nearly 30% of their BDZ long-term patients and 20% of their BDZ short-term patients as now or previously dependent on some substance (Table 5). Dependence problems specifically for BDZ were found in 9.1% of long-term and 3.6% of short-term patients.

Table 5. Physicians' global impressions of possible substance dependence in short-term and long-term BDZ patients, and formal psychiatric diagnoses of "dependence/abuse" in BDZ patients

Physicians' global impression of dependence	Short-term ($n = 56$) ^a		Long-term ($n = 132$) ^b		All BDZ patients and diagnosis of "dependence/abuse"	
	n	(% of 56)	n	(% of 132)	n	(% of 188)
Any substance (including BDZ) present, possible, or previous	11	(19.6)	39	(29.5)	9	(4.8)
Benzodiazepine						
Present	1	(1.8)	8	(6.1)	2	(1.1)
Possible or previous	1	(1.8)	4	(3.0)	0	(0.0)

^a Data missing for 2 patients

^b Data missing for 3 patients

Discussion

The results of this study indicate that BDZ prescriptions, as well as long-term BDZ use, are quite common in private psychiatric practices. Among the psychiatric outpatients receiving any psychotropic medication (estimated as 80% of the entire psychiatric practice population) on the given day of study, 53% were receiving a BDZ prescription. Furthermore, 70% of these BDZ patients had received the medication for 3 months or longer. Thus, it is apparent that in psychiatric practices BDZ prescriptions and long-term BDZ use are the norm rather than the exception. BDZ are prescribed to patients of all diagnostic categories including "substance dependence/abuse", to patients with endogenous affective disorders, and even to a comparable extent to patients with minor psychiatric disorders. Fifty-nine per cent of the BDZ patients received a combination with antidepressant drugs. Additionally, the physicians' global impressions of BDZ or other substance dependence did not preclude BDZ prescriptions or limit the duration of BDZ treatment. Together, these results indicate that private practice psychiatrists – physicians most skilled in the appropriate use of psychotropic medications – exhibit "therapist non-compliance" with regard to medical recommendations.

A limitation of the cross-sectional design of this study is that some patients presently classified as "short-term" will continue treatment exceeding 3 months. Thus, while presently classified as short-term, their "patient characteristics" may better typify long-term use, obscuring "true differences" between long-term and short-term patients.

Indications for BDZ Prescriptions

While the present study did not focus on the physicians' actual reasons for prescribing BDZ, some associations in prescription patterns point to important factors in the physicians' decision making. Together, BDZ patients were significantly older than non-BDZ patients, and 46% of the patient sample had BDZ prescription schedules indicative (in part or primarily) of sleep-related difficulties. Furthermore, analyses showed BDZ patients to have more or more severe self-reported symptoms and health complaints, even when controlling for the effects of age. Additionally, long-term BDZ patients received significantly more psychotropic medications and tended to receive more non-psychotropic medications than short-term patients. Together, these findings indicate that patients receiving BDZ prescriptions, especially those with long-term use, appear more distressed in several ways,

such as age-related problems and general health complaints. Consistent with these results, previous research has found long-term use of anxiolytics to be associated with age, emotional distress and chronic somatic health problems (Mellinger et al. 1984).

Hypotheses Regarding Psychiatrists' Non-Compliance

There is an apparent contradiction between the very restrictive treatment guidelines and the high frequency of BDZ prescriptions – especially their long-term use. The results of this study as well as informal discussions with physicians suggest that an understanding of physician non-compliance requires a complex set of explanations, which can be organized around three general assumptions:

1. Consistent in part with guidelines concerning treatment indications, physicians' BDZ prescription behaviour appears to be predicated on patients' subjective symptoms and complaints rather than on a diagnosis-based model. However, as symptoms such as anxiety, tension and insomnia are very common complaints, there must be additional factors influencing the physician's selection of patients for BDZ treatment.
2. The patient's illness behaviour affects the manner and the extent to which he/she reports symptoms as well as the doctor's subsequent assessment of the degree of the patient's distress. The doctor-patient interaction plays a prominent role in the assessment of the patient's complaints.
3. A cost/benefit analysis, an assessment of the potential benefits and possible adverse effects, is fundamental to the decision to prescribe any medication. In treatment of subjective symptoms to effect an immediate decrement in patient distress, the physician may apply a cost/benefit analysis for BDZ treatment on an *individual* basis. In contrast, medical guidelines are, by necessity, developed within a *general* context of treatment indications, possible adverse effects and contraindications.

While the present data are insufficient to evaluate these hypotheses appropriately, the findings of the study are at least consistent with them. In the following section, theoretical issues regarding the assumptions described above are discussed in an attempt to understand better the factors determining therapist non-compliance in prescribing BDZ.

Diagnosis- and Symptom-Based Models

Formal psychiatric diagnoses are usually considered the predominant indicators and determinants of treat-

ment decisions. However, in respect of BDZ use, the clinical pharmacologist's actual list of indications comprises descriptions of subjective symptoms, such as anxiety, tension and sleep disturbance rather than diseases (Haefely et al. 1983). Patients can experience a range of such disturbing symptoms, which may occur in relationship to various psychiatric diagnoses. For example, while symptoms of anxiety, nervousness, tension and sleep disturbances are common to anxiety and depressive disorders, they are also associated with a wide range of other psychiatric and somatic disorders. Moreover, these symptoms can be quite prominent even in persons who do not meet criteria for any specific psychiatric or medical diagnosis. Thus, predicated on a distinction between "disease" and "illness" (Barondess 1979; Cott 1986), the physician's assessment of the need for treatment is, to some extent, determined by the degree to which the patient is distressed, experiences specific symptoms, and everyday functioning is disrupted. A possible consequence of a symptomatic treatment model is more frequent use of polypharmacy. This is most likely to occur in patients with psychiatric disorders for which other psychotropic medications are primarily indicated, but also in a variety of somatic diseases. This factor may account for the high frequency of polypharmacy found in our patient sample.

Concept of Illness Behaviour

Mechanic (1983) conceptualized illness behaviour as "the manner in which persons monitor their bodies, define and interpret their symptoms, take remedial actions, and utilize the health-care system". In this view the reported complaints are a patient's actual symptoms modulated by his or her idiosyncratic illness behaviour, which may lead the physician to over- or underestimate symptoms. Therefore, a symptom-based model alone is not sufficient to explain the physician's decision for tranquillizer use (Mellinger et al. 1978). It is rather both the patients's expression of distress and the doctor's interpretation of the patient's illness behaviour which ultimately determine the perceived need for treatment and consideration of a BDZ prescription.

In general, prescription decisions are in part a function of such beliefs or values in both the doctor and the patient, and an integral aspect of the doctor-patient relationship (Linden 1988). For example, Balint (1971) found the doctor-patient relationship to be more frequently characterized as "tense and distant" for patients with long-term and repeated prescriptions. One-third of the long-term prescriptions were for psychotropic medications.

Cost/Benefit Analysis

Decision theory contends that an individual's judgement of the optimal choice often fails to take into consideration the relative importance of both positive and negative attributes of all possible options (Slovic et al. 1977). In the same way, medical guidelines contain contraindications, which frequently lack conceptual integration of the relative costs and benefits for the individual patient. These structural differences in assessment formulations between medical theory and actual treatment practices may contribute to therapist non-compliance. In the case of treatment with BDZ, the physician's assessment of costs and benefits of long-term prescriptions for a given patient usually includes considering whether or not it is justified to withhold BDZ treatment on the basis of dependence risk alone. Clearly long-term BDZ use can lead to physical dependence, which is a consequence of neuropharmacological adaptation, manifested by tolerance or withdrawal symptoms (Haefely 1986). However, for BDZ (or any medication for that matter) physicians may infer "dependence", when the patient insists on further use, irrespective of true physical dependence. In fact, such phenomena can be observed even in medications which are known to have no properties resulting in physical dependence, such as antidepressants (Linden and Wilke-Burger 1986). In the present study, physicians' determination of BDZ dependence may have resulted, at least in part, from such patient behaviour. Whether patient insistence is indicative of physical dependence, psychological habit, or rather the patient's experience of a continued need for the therapeutic effect, cannot be determined from the present data. Thus, the severity of the cost of dependence for any given patient is difficult to assess.

Only with further scientific research, which focuses on the physician's assessment of positive indicators for BDZ use as well as the physicians' assessment and definition of dependence and other risks of BDZ use, and which in addition compares BDZ use with alternative options, will a better understanding of the physicians' treatment decision with regard to BDZ prescriptions emerge.

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