Complementary Medicine Prescription Patterns in Germany

Berthold Schneider, Jürgen Hanisch, and Michael Weiser

BACKGROUND: There is growing interest in complementary medicine worldwide and a corresponding need to know how patients and practitioners interact.

OBJECTIVE: To chart the use of complementary medications compared with conventional treatments among practitioners and patients in Germany.

METHODS: Comparative analysis of patients' data from a prospective cohort study of 4178 patients presenting with chronic as well as acute symptoms by 218 practitioners at 218 centers in all German federal states between 2001 and 2002. Practitioners focused on either conventional medicine, complementary medicine, or both. Data were gathered on prescription patterns, treatment satisfaction and adherence, and the degree of patient involvement in treatment decisions.

RESULTS: Complementary medicine was preferentially prescribed over conventional medicine in patients <18 and >65 years old, in women, and in patients with chronic symptoms. Patients receiving complementary medications had, on average, higher rates of accompanying illnesses, received more preparations, and were more closely involved in the decision process than patients prescribed conventional therapies. The decision to use complementary medicine was based on both the patient's and the practitioner's wishes in 40.8% of the cases compared with 25.8% of the cases of conventional therapies. Tolerance and satisfaction with treatment appeared greater with complementary than with conventional therapies.

CONCLUSIONS: Complementary medicine is generally well established in Germany, apparently in a dialogue with conventional medicine. Patients receiving complementary medicine appear to be more closely involved in the decision process and more satisfied with treatments than conventionally treated patients.

KEY WORDS: adherence, complementary medicine, Germany, homeopathy, prescription patterns.

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Complementary and alternative medicine (CAM) is widely used in the US and Europe. The term includes such practices as acupuncture, herbal medicine, homeopathy, and phytotherapy.15 A survey in the US showed an increase in CAM use from 33.8% in 1990 to 42.1% in 1997 and a total expenditure estimated at $27 billion compared with $29.3 billion in expenditures for all physician services.4 The UK market for over-the-counter CAM remedies increased by 50% between 1994 and 1996. A 1998 survey in England reported that 28% of respondents either visited a CAM therapist or bought over-the-counter CAM remedies yearly.5,6 The growing use of complementary therapies has led to increasing interest from healthcare providers, payers, and practitioners, and there is a need for analyses of treatment practices and patient patterns. A survey of CAM use in the US in 2001 showed the above-average CAM users to be predominantly women aged 40–59 years with higher education than comparative groups.3 Martin et al.7 reported that white (73%) women (72%) made up the overwhelming majority of users. Their recent survey of CAM use in Northwest Ohio reported that 86% of respondents believed their therapy was helpful or very helpful. There seems to be no strong correlation between patients' attitudes toward conventional medicine and the use of complementary remedies,4,10 although between half and almost three-fourths of patients using nonconventional therapies in the US appear not to be informing their physicians about the decision.43

The healthcare systems as well as public awareness of complementary medicine are widely different among European countries. The situation in Germany, for example, differs from that in the UK or US. Complementary medicine, particularly homeopathy, has a long history of use in Germany and is publicly well recognized. Many physi-
Patients were followed for a maximum of 3 months. Treatment satisfaction was evaluated as physician-assessed patient adherence graded on a 4-score: very good, good, satisfactory, or unsatisfactory. Safety of medications was assessed using the same 4 scores. Adverse events were recorded by severity, kind of event, duration, actions taken, outcome, relation to treatment, and whether the event led to interruption of therapy.

Data were analyzed in descriptive and multivariate fashions as appropriate. As there might have been differences in observed covariates between the treatment groups confounding the direct comparison of treatment effects, patients were stratified according to propensity score for the evaluation of adherence, tolerability, and effectiveness of treatments as described by Rosenbaum and Field. Propensity score is a description of the conditional probability of receiving treatment given the observed covariates, and the calculations are applicable to observational studies to reduce bias, allowing for the application of standard statistical methods to construct matched strata that balance observed covariates for the treatment groups. The propensity score was estimated for each patient using the following logistic regression procedure in SAS:proc logistic DATA=base; model TREATMENT= covariates1 covariates2 covariates3;...selection=forward; output OUT=PROP PRED=predpropun, where base is the dataset containing all baseline variables including the covariates in the model statement and pred is the predicted propensity score. Data adjusted for propensity score were analyzed with standard Mantel-Haenszel methods. Statistical analyses were conducted using SPSS.11. For comparisons, a p value of 0.05 was taken as significance limit.

Results

PRACTITIONERS

A total of 218 physicians were included in the evaluation. The majority (74.3%) were general practitioners. Approximately two-thirds of the practices (64.7%) were located in cities. Most practices were of medium size, and the average number of employees was 3.6. About two-thirds of practices (61.2%) saw between 30 and 80 patients daily. Only 9.6% of practices received >80 patients. The majority of physicians were recruited from practices using both complementary and conventional medicine to similar extents. Practices focusing on conventional medicine were underrepresented (13.8%) compared with practices specializing in complementary therapies (24.8%).

PATIENTS

Data were collected on 4178 patients. Of these, 2355 were treated with complementary approaches and 1823 received conventional therapy. The median duration of treatment was 25 days in the complementary therapy group and 17 days in the group receiving conventional medications.

The majority of patients in both treatment groups were between 18 and 65 years of age (Figure 1a). There was a nonsignificant trend toward more prescriptions of complementary medicine for children (<18 years) and the elderly (>65 years), whereas conventional medications were preferentially prescribed for patients in other age groups (Figure 1a). There were significantly more women in the group receiving complementary medicine: 63.2% of patients in the complementary therapy group were women versus 58.4% in the conventional therapy group (p = 0.002 for between-group comparison). Patients with chronic symptoms (≥1 y) tended preferentially to receive complementary therapies. Only for patients with acute symptoms was there a greater tendency to prescribe conventional therapy (Figure 1b).
Most patients in both groups received only one medication and <10% received more than 3 agents (Table 1). There were no major differences between complementary and conventional medication patterns in terms of the number of preparations received; however, a greater number of complementary medications were prescribed over conventional therapies. In the group receiving complementary medication, 11% took conventional medicines in addition to their treatment.

**INDICATIONS**

The tendency to prescribe complementary medications appeared to be strongest for patients with mild to moderate symptoms. Mild symptoms were seen in 5.1% of patients in the complementary therapy group versus 3.0% in the conventional group; moderate symptoms in 47.1% versus 45.6%, respectively. However, these differences between the groups were not statistically significant. The major indications for both kinds of treatments were musculoskeletal, vertigo, and respiratory disorders (Figure 1c). There were nonsignificant trends toward differences between the groups for musculoskeletal symptoms and chronic respiratory disorders where conventional remedies were preferred to a complementary approach. More patients in the conventional treatment group had musculoskeletal symptoms or chronic respiratory disorders than in the complementary group (Figure 1c). In contrast, complementary therapies were preferred to conventional treatment for vertigo (Figure 1c). Accompanying illnesses were more frequent in the group receiving complementary therapies than in the conventional group (Table 1).

The most commonly used single complementary medication was the antirheumatic remedy Traumeel S (23.1%). This is a preparation of highly diluted herbal and mineral extracts with recorded antiinflammatory and analgesic effects that has long been used to treat musculoskeletal injuries and traumas in Europe and the US. It is interesting to note that antilymphatic and generally strengthening preparations such as Lymphomosseol, although intended for patients with infections, were prescribed to a wider range of patients. In the complementary therapy group, 3.8% of patients had infections, but 11.7% received antilymphatic medications.

**DECISION RESPONSIBILITY**

Approximately half of the treatment decisions were made by the practitioner alone; this was true for both treatment groups. However, the decision to use complementary medications appeared to be made less frequently by the patients alone than was the decision to use conventional therapies (Figure 2). In the group receiving complementary therapies, 40.8% of physicians re-
ported basing the decision on both patient wishes and practitioner’s views compared with 25.8% in the conventional treatment group. As data on the socioeconomic status of patients were not collected, the issue of a possible link between socioeconomic status and treatment decisions could not be addressed.

**TREATMENT SATISFACTION**

If adherence rates can be taken as a measure of treatment satisfaction, patients receiving complementary therapies tended to be more satisfied with their therapy than patients receiving conventional medications. Adherence with complementary treatment was evaluated as very good in 72.8% of the cases compared with 45.8% for conventional therapies (Figure 3). Physician-assessed tolerability showed similar high scores (Figure 3). Furthermore, only 0.5% of patients receiving complementary medications reported adverse effects considered probably or possibly related to the medication. In the conventional therapy group, 6.1% of patients reported adverse effects that were considered probably or possibly treatment-related.

**Discussion**

The results of this pilot survey may provide a guide to current attitudes and patterns to be further explored in larger population surveys. We found that, generally, there are small differences between the characteristics of patients receiving one or the other kind of therapy. There seems to be a closer dialogue between patient and practitioner with patients receiving complementary treatments and greater satisfaction with complementary treatments than with conventional medications.

The sample is over-representative of alternative medicine practitioners compared with the total number of physicians in Germany. In 2000, close to 10% of physicians were accredited practitioners of alternative medicine. As the survey attempted to make comparisons between patients receiving complementary and conventional medicine, most of the physicians surveyed practiced both varieties. Practices using mainly conventional medicine were under-represented (13.8%) compared with complementary practices (24.8%). This may reflect a lingering reluctance of practices of mainly conventional medicine to participate in studies involving complementary medicine. A survey conducted in the 1990s showed knowledge of alternative medical practice to be widespread among mainstream practitioners in Germany, with 85.8% of practitioners versed in homeopathy and 80.9% in chiropractic. However, only about one-third of these clinicians expressed a readiness to practice these forms of therapy.

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**Table 1. Characteristics of the Populations of Patients Receiving Complementary Therapy and Conventional Treatment**

<table>
<thead>
<tr>
<th>Patient Characteristic</th>
<th>Complementary</th>
<th>Conventional</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previously treated (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>yes</td>
<td>26.5</td>
<td>22.7</td>
<td>0.005</td>
</tr>
<tr>
<td>no</td>
<td>73.5</td>
<td>77.3</td>
<td></td>
</tr>
<tr>
<td>Accompanying illnesses (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>yes</td>
<td>30.3</td>
<td>26.8</td>
<td>0.016</td>
</tr>
<tr>
<td>no</td>
<td>69.7</td>
<td>73.2</td>
<td></td>
</tr>
<tr>
<td>On sick leave (%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>yes</td>
<td>21.6</td>
<td>29.0</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>no</td>
<td>78.4</td>
<td>71.0</td>
<td></td>
</tr>
<tr>
<td>Preparations prescribed (n)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>52</td>
<td>56</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>2</td>
<td>30</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>11</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>&gt;3</td>
<td>7</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

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**Figure 2. Responsibility for making the decision whether to prescribe alternative or conventional therapy in the 2 groups. p < 0.001 for between-group comparison.**

**Figure 3. Tolerability and adherence with complementary and conventional therapy.**

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There are interesting similarities and differences between our findings and those of several surveys of complementary medicine use in other countries, such as the US. As in the US, patients sought complementary treatment for much the same ailments as those for which conventional therapy is requested. Conventional therapy was more frequently used for chronic respiratory disorders, and complementary therapies were preferred for vertigo. Trends toward differences were seen for circulatory disorders and gastrointestinal and musculoskeletal ailments.

Some of the diagnoses, such as circulatory disorders, are somewhat diffuse, and there may be differences between groups of patients diagnosed with such symptoms. Hence, the use of complementary medications in these patients may be more targeted at furthering general well-being than at improving a specific symptom such as pain.

As in the US, more German women than men tended to receive complementary medications, as has been indicated in other statistical data for Germany. However, both our treatment groups had larger numbers of women than men (Figure 1b), and the differences in preferences between the sexes were not as large as in the American studies cited. In contrast to several studies of American users of alternative medicine, we found that younger and older patients tended preferentially to receive complementary therapies compared with patients aged 18–65 years. However, the differences between both age groups and treatment preferences were small and not statistically significant.

An interesting difference between the German and American treatment patterns is that a large number of American patients do not inform their physicians about the decision to take such remedies. This points to a skeptical view of complementary medicine among mainstream practitioners in the US, which is not reflected in our German centers. Complementary medicine, most prominently homeopathy, has a long history in Germany. For example, Traumeel S has been sold over the counter in pharmacies in Germany for >50 years, but has been included in the Homeopathic Pharmacopoeia of the United States since 1979. Such traditions may contribute to a generally greater acceptance of complementary medicine in Germany among both the general public and physicians.

This favorable image of complementary medicine among both involved parties is reflected in the greater dialogue between patient and practitioner in the decision process for complementary medications than for conventional treatments. This may be due to patient bias if patients who tend to prefer complementary medicine feel more strongly about choice and actively attempt to persuade their practitioner to prescribe these remedies. However, this explanation is contradicted by the small percentage of prescriptions based solely on patient demands. We ascribe the differences between decision-making procedures to differences in practices between complementary and traditional medicine. Many complementary therapies, such as homeopathy, are based on an extensive dialogue between patient and physician, aiming at providing a holistic view of the state of the patient rather than a straightforward diagnosis of symptoms. Such close interaction between patient and practitioner would naturally lead to a deeper discussion of treatment options and a greater degree of patient participation, both in patients who opt for alternative therapies and for those deciding to receive conventional treatment after an informed discussion. We did not collect data allowing us to determine a possible link between socioeconomic status and influence over treatment decisions.

An indication of the influence of patient involvement was the far greater treatment satisfaction observed with complementary therapies reflected in physician-assessed patient adherence and tolerability. As >75% of patients in both groups had symptoms lasting <6 months, it appears unlikely that this greater satisfaction reflects differences in the acute or chronic nature of ailments between groups. Herbal and homeopathic remedies have a long record of very good tolerability, and one reason patients turn to their use may be dissatisfaction with conventional therapies. Although there is currently a wide discussion about the issue of potential harm of certain herbal remedies, our survey supports the positive view of complementary medications.

STRENGTHS AND WEAKNESSES

The majority of practitioners prescribed both complementary and conventional medicine to a similar extent, which should ensure a fairly representative patient population, although the lack of formal randomization processes raises the possibility of selection bias. Nonrandomized studies are often thought to be plagued by bias and to exaggerate treatment effects compared with standard randomized clinical trials. However, surveys indicate that this risk is overstated and that these types of studies can add valuable data to our knowledge. Also, proper randomization might have weakened the data on patient involvement in treatment decisions, as there is an element of self-selection by patients opting to visit a clinic specializing in either complementary or conventional therapies. Furthermore, a practitioner with extensive knowledge of both complementary and conventional treatments can be expected in a discussion to present the patient with a more informed unbiased choice than practitioners preferentially using one or the other treatment approach.

A further limitation was the use of practitioners' assessments to evaluate patient satisfaction and tolerability. Also, it can be debated whether adherence is a valid measure of patient satisfaction. However, adherence with a medication is strongly influenced by both the efficacy and the impact on the patient's life-style, thus, the link would appear strong enough to warrant our limited conclusions.

Summary

This limited pilot study indicates that, in Germany, patients receiving complementary medicine are more closely involved in a dialogue with practitioners and more satisfied with therapies than patients receiving conventional
medications. However, there are only small demographic differences between the patient groups.

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EXTRACT

ANTECEDENTS: Existe un creciente interés en la medicina complementaria mundial al igual que una necesidad correspondiente de saber cómo los pacientes y los médicos interactúan.

OBJECTIVE: Realizar un estudio piloto con el propósito de trazar el uso de medicamentos complementarios comparados con tratamientos convencionales entre médicos y pacientes en Alemania.

MÉTODOS: Se realizó un análisis comparativo de los datos de pacientes de un estudio cohorte prospectivo de 478 pacientes presentando síntomas toma crónica como agudas utilizando 218 médicos en 218 centros en todos los estados federados alemanes entre el 2001–2002. Las prácticas enfocaron la medicina convencional, la medicina complementaria, o ambas. Se recolectaron datos sobre los patrones de prescripción, sobre la satisfacción y el cumplimiento con el tratamiento, y sobre el grado de envolvimiento del paciente en la toma de decisiones sobre el tratamiento.

RESULTADOS: La medicina complementaria fue prescrita preferentemente a la medicina convencional en pacientes <18 y >65 años, en mujeres, y en pacientes con síntomas crónicos. Pacientes recibiendo medicamentos complementarios tuvieron en promedio una proporción mayor de enfermedades, recibieron más prescripciones, y estuvieron menos en el proceso de toma de decisiones que pacientes recibiendo prescripciones por terapias convencionales. La decisión de utilizar la medicina complementaria se basó en el deseo de ambos, el paciente y el médico, en 40.8% de los casos comparado con 25.8% de casos en terapias convencionales. La tolerancia y satisfacción con el tratamiento pareció mayor con las terapias complementarias que con las convencionales.

CONCLUSIONES: La medicina complementaria está generalmente bien establecida en Alemania, aunque su diálogo con la medicina convencional. Pacientes recibiendo medicamentos complementarios parecen estar envueltos más de cerca en el proceso de decisión y parecen estar más satisfechos con el tratamiento que los pacientes tratados convencionalmente.

Brenda R Morand

RÉSUMÉ

CONTEXTE: Il y a un intérêt grandissant pour la médecine alternative à travers le monde a ainsi qu’un besoin de comprendre comment les patients et les praticiens interagissent dans le choix du traitement.

OBJECTIF: Une étude pilote a été mise en place afin de mesurer l’usage de médicaments alternatifs par rapport aux médicaments conventionnels chez les patients et praticiens en Allemagne.

MÉTHODES: Une analyse comparative des données de patients provenant d’une étude de cohorte de 478 patients présentant des conditions aiguës et chroniques et traités par 218 praticiens dans tous les états allemands entre 2001 et 2002. La pratique a classé selon l’utilisation de la médecine traditionnelle, de la médecine alternative, ou d’une combinaison des deux. Des données ont été recueillies sur les habitudes de prescription, la satisfaction par rapport au traitement, l’observance, et le niveau d’implémentation du patient dans le choix du traitement.

RÉSULTATS: La médecine alternative a été prescrite davantage que la médecine traditionnelle chez les patients âgés de moins de 18 ans et de plus de 65 ans, chez les femmes et chez les patients souffrant d’une condition chronique. Les patients recevant des médicaments alternatifs avaient en moyenne une plus grande incertitude de maladies concomitantes, recevaient davantage de préparations et étaient davantage impliqués dans la décision de traitement par rapport aux patients recevant la médecine traditionnelle. La décision d’employer la médecine alternative était basée à la fois sur le désir du patient et du patient dans 40.8% des cas contre 25.8% des cas pour la médecine traditionnelle. La satisfaction et l’observance au traitement étaient plus grandes avec la médecine alternative qu’avec le traitement conventionnel.

CONCLUSION: La médecine alternative est bien établie en Allemagne dans une relation avec la médecine traditionnelle. Les patients qui reçoivent un traitement alternatif semblent être impliqués davantage dans la prise de décision et être plus satisfaits que les patients recevant un traitement traditionnel.

Nicolas Paquette-Lamonique