Assessing adherence to guidelines for common mental disorders in routine clinical practice

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Abstract

Objective. To measure the overall level of adherence to clinical guidelines with a set of cross-diagnostic process indicators in a randomly selected sample of outpatients who started an acute phase treatment for a common mental disorder in a routine clinical setting.

Design, Setting and Participants. We developed a generic set of quality measures to asess the implementation of guidelines in daily practice. This set was tested in a retrospective cohort study in a randomly selected sample of 300 outpatients who started an acute phase psychiatric treatment for various psychiatric disorders. Patients were treated with pharmacotherapy, psychotherapy or a combination of both.

Main Outcome Measure. Scores on cross-diagnostic process indicators.

Results. Most indicators were positive in a high to very high percentage, indicating that most treatment elements in this routine clinical practice setting were delivered according to the guidelines for the acute treatment phase. We observed significant lower scores in the combined treatment group as compared with the two other treatment groups on the indicators ‘correct treatment module’ and ‘stepped care’ (P < 0.005). Patients receiving psychotherapy had the best results on the separate indicators. Overall, only a minority of the patients in this sample was treated in complete accordance with the guidelines and treatment manuals.

Conclusions. Assessment of guideline adherence is feasible with this cross-diagnostic set of process indicators and hampering factors of implementation could be easily detected. Future research should focus on the relationship with treatment outcomes.

Keywords: quality measurement, quality indicator, guidelines, mental health disorders

Introduction

Over the past decades, the selection of treatment for patients with psychiatric disorders has gradually shifted from an approach based on clinical expertise towards evidence-based medicine. In many countries, psychiatric organizations and services have now formulated and implemented evidence-based guidelines for the pharmacological and psychological treatment of psychiatric disorders or follow those from international organizations. The implementation of evidence-based guidelines is expected to improve the effectiveness of pharmacological and psychological treatments of mood and anxiety disorders in clinical practice [1, 2].

Although evidence-based guidelines are widely used nowadays, the generalizability of the results from the randomized clinical trials that form their building blocks can be questioned, as those trials typically demand controlled conditions and use stringent inclusion and exclusion criteria for patient selection [3–5].

At the moment there is insufficient evidence whether patients in routine psychiatric care benefit from treatment according to evidence-based guidelines. In general, the effects of guidelines on patient health outcomes are often far less studied and data are less convincing. Increased adherence to guidelines may or may not be necessarily associated with improved clinical outcomes [6–9].
Additionally, there has been little work on cross-diagnosis approach to guideline-based quality assessment, since most guidelines have been developed for specific, single diagnosis. For implementation in standard clinical settings, limited quality management resources require efficient, summary means of tracking quality [10, 11].

In order to determine whether the treatment according to guidelines is associated with improved treatment outcomes in clinical practice, adherence to these guidelines needs to be assessed first. Studies focusing on the adherence to guidelines are so-called process-focused studies. In the last 10 years several studies, assessing the adherence to guidelines in clinical practice, have been published. However, these studies show great variety in their approach. Some studies focused on choice and dosage of medication, others assessed provision of case management or outcomes. The number of indicators used to assess adherence varied from 1 to 49 between studies. Because of the wide variety of approaches, comparing adherence rates between studies is rather problematic. This is even further hampered by the fact that the terms used to describe the degree of adherence vary greatly. Some studies used levels as outcome, i.e. low, moderate to high level of adherence; other studies used percentages to describe the level of adherence. Most adherence studies focused on the adherence to guidelines for a specific disorder, such as depressive disorder, bipolar disorder or schizophrenia. The majority of studies assessed only one specific treatment modality, predominantly pharmacotherapy, in frequency followed by pharmacotherapy in combination with psychotherapeutic interventions. Finally, many adherence studies used administrative data, for instance from insurance companies [12–45].

To our knowledge there are no studies that have assessed clinical guideline adherence across multiple disorders and treatment modalities in a routine clinical setting. Such an approach can be very useful to assess the overall level of adherence in these settings and to identify both general and specific factors that influence adherence to guidelines in routine clinical practice. In order to assess the overall level of adherence to guidelines we developed a set of cross-diagnostic process indicators based on the guidelines for the treatment of specific common mental disorders (i.e. mood, anxiety or somatoform disorders).

With this set of indicators we retrospectively examined the overall level of adherence to clinical guidelines in a randomly selected sample of outpatients who started an acute phase treatment for a common mental disorder in a routine clinical setting.

As patients and setting in routine clinical practice usually do not resemble those in randomized clinical trials, we expected the degree of guideline concordant treatment in our clinic to be limited.

Methods

Clinical setting

The use of evidence-based guidelines and outcomes measurement is integrated in routine practice in Rivierduinen, a regional mental health-care provider (RMHCP) in the Netherlands. Rivierduinen provides secondary mental health care for an area with over 1 million inhabitants. In the Netherlands, access to mental health care is not limited by insurance or financial status. Health insurance is compulsory for all citizens, and for patients without medical insurance, such as illegal immigrants, psychiatric services provide all care free of charge.

The implementation of guidelines and a system for routine outcome monitoring started in 2002, in collaboration with the department of psychiatry of the Leiden University Medical Hospital.

Guidelines

The standard guidelines in the Netherlands are the multidisciplinary guidelines, formulated by a collaboration of the Dutch Association of Psychiatry, Psychology and General Practitioners (www.trimbos.nl). These guidelines describe the treatment steps for many psychiatric disorders. When multidisciplinary guidelines were not available for specific disorders, the guidelines formulated by the Dutch Association of Psychiatry were implemented by the RMHCP Rivierduinen (www.mvvp.net).

The local stepped care-based programs follow the above national guidelines and were slightly adjusted to the local setting (most importantly by adding routine outcome monitoring as an element of treatment). Programs have been formulated for unipolar depressive, anxiety or somatoform disorders and describe which treatment modality, form and frequency of psychotherapy and, in the case of pharmacotherapy, which group of medication should be selected for the treatment of specific disorders. Also, information on the duration of each treatment step is available and it is indicated when to switch to the next step. For example, the first step in the treatment of unipolar depression without psychotic symptoms is a selective serotonin reuptake inhibitor (SSRI) for at least 6 weeks or cognitive behavioral therapy (CBT) for 12 weeks, with a frequency of one session every week. At the end of this first step, the patient has to be measured with routine outcome monitoring to assess whether the chosen treatment is effective or not (detailed guidelines are available from the first author).

Routine outcome monitoring

During the intake phase, patients are assessed with a standardized diagnostic interview (MINI International Neuropsychiatric Interview plus [46]), rating scales and self-report measures. After 3–4 months an outcome assessment is scheduled, including rating scales and self-report measures. A large number of instruments have been selected for routine outcome monitoring. Two kinds of self-report measures and rating scales are employed: generic and disorder specific. Generic measures, such as the Brief Symptom Inventory [47], are completed by all patients. Specific measures such as the Panic Appraisal Inventory [48] are only
administered when the patient meets criteria for a panic disorder for example.

In order to avoid an extra burden on the therapist, and to bypass the difficulties therapists encounter collecting data on a routine basis, independent research nurses perform routine outcome monitoring. The therapists are informed about the results of routine outcome monitoring and discuss the results with their patients. To facilitate the administration of the MINI interview, rating scales and the completion of self-report measures, dedicated software ‘Questmanager’ has been developed. The assessment in the intake phase can take up to 2 h, depending on the psychopathology present: 35 min for the MINI-plus, 40 min for the rating scales and 45 min for the self-report measures. An outcome assessment after 3–4 months takes on average 1 h and includes all the above with the exception of the MINI and the Dimensional Assessment of Personality Pathology-Short Form, which are administered only at the baseline assessment. Routine outcome monitoring has been performed in over 8000 patients and virtually no patients refuse the assessment [49].

Patients

Between January 2004 and January 2006 in total ~3000 patients started treatment for a unipolar depressive, anxiety or somatoform disorder. We selected 300 patients, 10% of the total number, aged between 18 and 65 years, who were assigned to receive treatment for the acute phase of a DSM-IV depressive, anxiety or somatoform disorder in the period between January 2004 and January 2006 at the Leiden outpatient department of RMHCP Rivierduinen. For each year we included 100 consecutive patients who had had at least one treatment session with their therapist after the diagnostic phase and who mastered a sufficient body of the Dutch language to complete the routine outcome monitoring assessments.

Treatment groups

The multidisciplinary guidelines explicitly mention three treatment modalities: pharmacotherapy, psychotherapy and the combination therapy. In the case of pharmacotherapy patients were treated by a psychiatrist or by a resident in psychiatry, supervised by a psychiatrist. In the case of psychotherapy, patients were treated by a psychotherapist or by a resident in psychiatry supervised by a psychotherapist. In the case of combination therapy, patients could be treated by one therapist (psychiatrist), but also by combinations of supervised residents, psychiatrists and psychotherapists. As different treatment modalities and different therapists might have an effect on guideline adherence, we categorized patients in the above-mentioned treatment groups.

Indicators

A consensus panel of senior psychiatrists from RMHCP Rivierduinen and the department of psychiatry of the Leiden University Medical Center defined eight disorder-independent indicators. The indicators were based on the above-mentioned guidelines and we selected data that could be reliably extracted for the majority of the delivered treatments. Some more detailed data on the delivered treatments, like compliance to pharmacotherapy or whether psychotherapy sessions strictly followed the manuals were not available in a consistent manner. As recommended in the literature, we conducted a pilot study to assess the feasibility of our approach.

The first indicator (treatment modality according to guideline) shows whether a correct treatment for the primary DSM-IV diagnosis as mentioned in the guidelines, has been applied. For example: the correct treatment for a panic disorder should be an SSRI or CBT.

The second indicator assesses whether the stepped care principle has been followed. For example: the first step in the treatment of unipolar depression without psychotic symptoms is an SSRI and not a tricyclic antidepressant, which is the second step according to the Dutch guidelines.

Depending on the guideline, patients receive psychotherapy or medication or both. In the case of medication treatment we defined two indicators. The first assesses whether the medication has been increased to the minimal dose that has been listed for the specific medicament in the guidelines. The second indicator for medication treatment measures whether the duration of pharmacotherapy has been at least 6 weeks. We choose 6 weeks, as this is the common minimal duration formulated in all the guidelines that were implemented in our clinic.

Treatment with psychotherapy was also evaluated with two indicators, again based on common characteristics of all the guidelines. The first assessed the minimal duration of 12 weeks. This is the minimal duration formulated for psychotherapy in all the guidelines. The second indicator assessed the frequency of psychotherapy. As psychotherapy sessions in routine clinical practice often fail to obtain a frequency of once a week, because sessions are canceled due to holidays or personal circumstances from both the patient and therapist, the consensus panel judged a minimal frequency of one session every 1.5 weeks to reflect the frequency as demanded by guidelines. The indicators for psychotherapy are not applicable to Eye Movement Desensitization and Reprocessing. Duration and frequency of this form of psychotherapy are not well defined and hence this treatment modality was not rated in our study.

We also defined two indicators to assess the use of routine outcome monitoring, which where specific for the local programs of care. The indicators examine whether patients are measured during the diagnostic phase and during the first phase of treatment to assess the effectiveness of their treatment.

The treatment adherence score was the sum of the indicators and higher scores reflected better adherence. For patients receiving pharmacotherapy or psychotherapy, the maximum score was six points and patients receiving a combination of pharmacotherapy and psychotherapy the maximum score was eight points.
Data collection and assessment

The first author performed a manual-based assessment by a retrospective chart review to include patients that fulfilled the inclusion criteria. Relevant data were entered in a database and the eight indicators were listed on a form and were rated 1 if the criteria were met and 0 if not. The routine outcome monitoring data were retrieved from a special routine outcome monitoring database in our clinic. To assess inter-rater reliability a random replicate sample of 30 medical records was assessed by two psychiatrists and showed a good inter-rater reliability (kappa >0.8). Data and scores were entered in a database. Anonymity was maintained and data were used only in aggregate form: accordingly, the participating institute did not require the patient’s consent to the use of these data. The study protocol was approved by the institute’s medical ethical committee.

Statistical analyses

Analysis was performed using SPSS 12.0.1 (SPSS, Inc., Chicago, IL, USA). The chi-square test was used to examine the differences between scores on the process indicators in the three subsequent years.

Results

Patients

Patient characteristics of the 300 patients in our study are presented in Table 1.

The male/female ratio and mean age were not different between the diagnostic categories. The mean age was 37.0 years (SD 11.1). The majority of patients was suffering from a mood disorder (46.3%), followed by an anxiety disorder (36.0%). A small group was diagnosed with a somatoform disorder (17.7%). When patients had comorbid disorders, we assessed the disorder that was chosen as treatment focus by the board of therapists at the intake conferences.

Of the 300 patients, 46.0% was treated with psychotherapy, 36.0% of the patients received pharmacotherapy and a minority 13.7% received a combination of pharmacotherapy and psychotherapy. A group of 13 (4.3%) patients was defined as receiving miscellaneous forms of treatment and was excluded (i.e. light therapy, supportive care etcetera).

Scores on the indicators

The first indicator showed that on average 94.7% of all patients received treatment for their diagnosis in accordance with the guideline (Table 2). The psychotherapy group did better on this indicator than the pharmacotherapy and combination therapy group (P≤0.005). The second indicator, assessing whether the provided module was according to the principle of stepped care, showed positive results in 91.9% of all patients. The combination therapy group scored significantly less on this indicator compared with the two other treatment groups (P<0.000).

The duration of pharmacotherapy was at least 6 weeks in 68.2% of the patients. The pharmacotherapy group was more likely to receive the minimal duration of 6 weeks of pharmacotherapy compared with the combination therapy group. The minimal adequate dose was prescribed in 90.9% of the patients and there were no differences between the pharmacotherapy and combination therapy groups.

The minimal duration of 12 weeks of psychotherapy was achieved in the majority of patients in the psychotherapy and combination therapy group (74.1 and 81.2% respectively). However, the frequency of one psychotherapeutic session every 1.5 weeks was only met in 27.6% of the patients with psychotherapy and in 25.0% of the patients with combination therapy.

The first indicator for routine outcome monitoring showed that assessment during the diagnostic phase was performed in about 50% of the patients. However, fewer patients in the combination therapy group were assessed during this phase then in the psychotherapy and pharmacotherapy groups (P≤0.009). The second indicator showed that only a minority of patients was measured during the therapeutic phase (28.9%).

In the next step we determined percentages of patients treated completely in accordance with the guidelines and who received all routine outcome monitoring measurements; i.e. for whom all the indicators for the course of the

Table 1 Patient characteristics

<table>
<thead>
<tr>
<th>Patient characteristics</th>
<th>PsT</th>
<th>PsT</th>
<th>Ct</th>
<th>Miscellaneous</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total (n)</td>
<td>138</td>
<td>108</td>
<td>41</td>
<td>13</td>
<td>300</td>
</tr>
<tr>
<td>Age (years) (mean ± SD)</td>
<td>36.0 ± 11.0</td>
<td>39.1 ± 11.1</td>
<td>35.1 ± 10.9</td>
<td>37.3 ± 10.6</td>
<td>37.0 ± 11.1</td>
</tr>
<tr>
<td>Female [n (%)]</td>
<td>101 (73.2)</td>
<td>62 (57.4)</td>
<td>28 (68.3)</td>
<td>8 (61.5)</td>
<td>199 (66)</td>
</tr>
<tr>
<td>Mood disorder [n (%)]</td>
<td>34 (24.6)</td>
<td>77 (71.3)</td>
<td>17 (41.5)</td>
<td>11 (84.6)</td>
<td>139 (46.3)</td>
</tr>
<tr>
<td>Anxiety disorder [n (%)]</td>
<td>64 (46.4)</td>
<td>25 (23.1)</td>
<td>17 (41.5)</td>
<td>2 (15.4)</td>
<td>108 (36.0)</td>
</tr>
<tr>
<td>Somatoform disorder [n (%)]</td>
<td>40 (29.0)</td>
<td>6 (5.6)</td>
<td>7 (17.0)</td>
<td>0 (0.0)</td>
<td>53 (17.7)</td>
</tr>
</tbody>
</table>

aPsychotherapy.
bPharmacotherapy.
cCombination therapy.
treatment were scored positive. This was only the case in a minority of patients. The pharmacotherapy group had a significantly higher score of 12.0%, compared with the psychotherapy and combination therapy groups (1.7 and 2.7% respectively; \( P < 0.000 \)).

Assessing guideline adherence without routine outcome monitoring resulted in higher percentages with positive scores on all the indicators, especially in the pharmacotherapy group. More than half of the patients (54.6%) in the pharmacotherapy group were treated according to the guidelines, and only 8.5% of the patients in the psychotherapy group and 2.7% of the patients in the combination therapy group.

### Discussion

To our knowledge this is the first study assessing guideline adherence across multiple mental health disorders and treatment modalities in a routine clinical setting. We consolidated disorder-specific guideline-based process indicators into a smaller, and easy to use, set of cross-diagnostic indicators. Contrary to our hypothesis, most indicators were positive in a high to very high percentage of patients, indicating that most treatment elements in this routine clinical practice setting were delivered according to the guidelines, and only 8.5% of the patients in the psychotherapy group and 2.7% of the patients in the combination therapy group.

Although most indicators were positive in the majority of patients and across different treatment modalities, only a minority (<10%) of the patients in this sample was treated in complete accordance with the local treatment manuals, which included routine outcome monitoring. When routine outcome monitoring was not taken into account, percentages were still low. The fact that so few patients are treated according to the guidelines is rather disturbing, as guideline concordant treatment is generally thought to result in better patient outcomes. On the other hand, the correlation between guideline concordant treatment and patient outcomes in routine clinical practice is still subject of an ongoing debate in the literature, and some studies suggest that the correlation may be moderate [7, 8].

It is difficult to benchmark the adequacy of acute phase treatment in our outpatient clinic against other studies assessing comparable treatment groups. Most other studies have only examined the acute phase care for depression and differ importantly in the choice and number of selected process indicators. Despite the fact that scores on the separate indicators are relatively high, our finding that complete adherence to practice guidelines occurs only in a minority of patients, in particular for patients receiving combination therapy, is consistent with the findings from several other studies [17, 19, 26, 33, 37].

### Table 2

Scores on process indicators (%) for the three treatment modalities

<table>
<thead>
<tr>
<th>Process indicators</th>
<th>n (eligible patients per indicator)</th>
<th>Psychotherapy</th>
<th>Pharmacotherapy</th>
<th>Combination therapy</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The combination of DSM-IV diagnosis and the provided treatment module is according to the guidelines</td>
<td>Number assessed</td>
<td>117</td>
<td>108</td>
<td>37</td>
<td>262</td>
</tr>
<tr>
<td></td>
<td>Number adherent</td>
<td>116 (99.1)</td>
<td>100 (92.6)</td>
<td>32 (86.5)*</td>
<td>248 (94.7)</td>
</tr>
<tr>
<td>The provided module is according to the principle of stepped care</td>
<td>Number assessed</td>
<td>116</td>
<td>100</td>
<td>32</td>
<td>248</td>
</tr>
<tr>
<td></td>
<td>Number adherent</td>
<td>115 (99.1)</td>
<td>91 (91.0)</td>
<td>22 (68.8)*</td>
<td>228 (91.9)</td>
</tr>
<tr>
<td><strong>Routine outcome monitoring</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Routine outcome monitoring in diagnostic phase</td>
<td>Number assessed</td>
<td>117</td>
<td>108</td>
<td>37</td>
<td>262</td>
</tr>
<tr>
<td></td>
<td>Number adherent</td>
<td>65 (55.6)</td>
<td>57 (52.8)</td>
<td>13 (35.1)</td>
<td>135 (51.5)</td>
</tr>
<tr>
<td>Routine outcome monitoring in therapeutic phase</td>
<td>Number assessed</td>
<td>116</td>
<td>100</td>
<td>32</td>
<td>248</td>
</tr>
<tr>
<td></td>
<td>Number adherent</td>
<td>36 (31.0)</td>
<td>15 (15.0)</td>
<td>7 (21.9)</td>
<td>58 (28.9)</td>
</tr>
</tbody>
</table>

* \( P \leq 0.005 \) tested with Chi-square test.
We believe that our study has several strong points. Our patient sample was derived from a routine clinical outpatient setting where guidelines have been intensively implemented and reliable information regarding patient characteristics, the delivered treatment and therapists was available. There are, however, also some limitations to consider. The influence of guidelines on treatment was only examined in one specific center and only in newly treated patients in the acute phase of their disorder. Another potential limitation is the absence of relative weighing and the limited coverage of treatment by the indicators.

In our study we demonstrated that assessment of guideline adherence across common mental disorders in clinical practice is feasible with a cross-diagnostic set of quality indicators and can be used to detect hampering factors in implementation. We suggest that quality monitoring in smaller clinical center and only in newly treated patients in the acute phase of their disorder. Another potential limitation is the absence of relative weighing and the limited coverage of treatment by the indicators.

Further research into patient, therapist and institutional factors influencing the concordance of treatments with clinical guidelines in routine clinical practice is needed.

Acknowledgments

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References


Appendix

Case vignettes to illustrate the use of indicators (positive score on the indicator is 1, negative score is 0)

Case vignette 1

Patient A, a 24-year-old male with no previous history of psychiatric illness, was referred to our outpatient clinic by his general practitioner for treatment of depressive symptomatology. During the diagnostic phase patient A was assessed with routine outcome monitoring. He was diagnosed with a severe depressive disorder. Therefore, the psychiatrist chose to start treatment with the SSRI citalopram at 20 mg citalopram daily. After approximately 7 weeks the therapist referred the patient to assess symptoms with routine outcome monitoring again, to establish whether the treatment had been effective or not.
Scoring of the indicators was as follows: routine outcome monitoring was performed during the diagnostic phase: 1; the combination of DSM-IV diagnosis and the provided treatment module was according to the guidelines: 1; the provided module was in accordance with the principle of stepped care: 1; the minimal adequate dose of the specific medicine was prescribed: 1. The duration of the pharmacological treatment was at least 6 weeks: 1; routine outcome monitoring was performed in the therapeutic phase: 1. There was a positive score on all six indicators and hence patient A was considered being treated in complete concordance with the guidelines.

**Case vignette 2**

Patient G was a 56-year-old female outpatient with no previous history of a psychiatric illness. The clinical diagnosis was a panic disorder. Treatment was started and consisted of CBT and citalopram 10 mg daily, with no further dosage increase. For unknown reasons, the SSRI was stopped within 4 weeks by the clinician. The frequency of the CBT was on average one session every 3 weeks. After 5 months, patient G was assessed with routine outcome monitoring to measure the effect of the CBT.

Scoring on the indicators was as follows: there was no routine outcome monitoring during diagnostic phase: 0; the combination of DSM-IV diagnosis and the provided treatment-module is described in the guidelines: 1; the provided module, however, was not according to the principle of stepped care (combination therapy is not the first step): 0; the minimal adequate dose of the specific medicine was not prescribed: 0; the duration of the pharmacotherapy module was <6 weeks: 0; the duration of the psychotherapy module was at least 12 weeks: 1; the frequency of psychotherapy was less than one session every 1.5 weeks: 0; the assessment of guideline adherence showed that patient G was treated in limited concordance with the guidelines: only three out of the eight indicators for combination therapy were scored positive.

**Case vignette 3**

Patient V was a 40-year-old woman referred to our outpatient clinic because of unexplained physical complaints. Routine outcome monitoring during the diagnostic phase confirmed the clinical diagnose of an undifferentiated somatoform disorder. Patient V was referred to a psychotherapist to start CBT. The therapist delivered CBT for >12 weeks with an average of 1 session every 1.5 weeks. During the psychotherapeutic treatment there was, however, no record of a routine outcome monitoring assessment.

Scoring on the indicators was as follows: routine outcome monitoring was done during diagnostic phase: 1; in accordance with the guidelines and with respect to the principal of stepped care the combination of DSM-IV diagnosis and the provided treatment module was according to the guidelines: 1; the provided module was in accordance with the principle of stepped care: 1; the duration of the psychotherapy was at least 12 weeks: 1; the frequency of psychotherapy was at least one session every 1.5 weeks: 1; routine outcome monitoring was performed in the therapeutic phase: 0; the assessment of guideline adherence showed that this patient was treated almost in complete concordance with the guidelines as there was a positive score on five of the six indicators.