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Diagnose, indicate, and treat severe mental illness (DITSMI) as appropriate care: A three-year follow-up study in long-term residential psychiatric patients on the effects of re-diagnosis on medication prescription, patient functioning, and hospital bed utilization

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Abstract

Background. While polypharmacy is common in long-term residential psychiatric patients, prescription combinations may, from an evidence-based perspective, be irrational. Potentially, many psychiatric patients are treated on the basis of a poor diagnosis. We therefore evaluated the DITSMI model (i.e., Diagnose, Indicate, and Treat Severe Mental Illness), an intervention that involves diagnosis (or re-diagnosis) and appropriate treatment for severely mentally ill long-term residential psychiatric patients. Our main objective was to determine whether DITSMI affected changes over time regarding diagnoses, pharmacological treatment, psychosocial functioning, and bed utilization.

Methods. DITSMI was implemented in a consecutive patient sample of 94 long-term residential psychiatric patients during a longitudinal cohort study without a control group. The cohort was followed for three calendar years. Data were extracted from electronic medical charts. As well as diagnoses, medication use and current mental status, we assessed psychosocial functioning using the Health of the Nations Outcome Scale (HoNOS). Bed utilization was assessed according to length of stay (LOS). Change was analyzed by comparing proportions of these data and testing them with chi-square calculations. We compared the numbers of diagnoses and medication changes, the proportions of HoNOS scores below cut-off, and the proportions of LOS before and after provision of the protocol.

Results. Implementation of the DITSMI model was followed by different diagnoses in 49% of patients, different medication in 67%, some improvement in psychosocial functioning, and a 40% decrease in bed utilization.

Conclusions. Our results suggest that DITSMI can be recommended as an appropriate care for all long-term residential psychiatric patients.

Introduction

About 160,000 people in the Netherlands aged between 18 and 65 suffer from severe mental illness (SMI) [1]. In the catchment area of the Mental Health Institute where this study was conducted, the approximate number of patients with SMI was 12,000 [2].

According to Sterrenburg et al. [3], polypharmacy is common in the subgroup of patients with SMI who have been hospitalized for longer periods. Due to the complexity and severity of these patients' psychiatric condition and comorbidity, polypharmacy—that is combining over four psychotropic drugs—may be hard to avoid. The authors also concluded that, over time, reviews of medication do not always lead to decreased use, but only to other combinations—often less rational ones. Several studies have also warned that the combinations of medication prescribed can lead to toxic dosages, potentially dangerous interactions, and serious side-effects [3,4,5]. Tihonen et al. [5] showed benzodiazepine use to be associated with higher mortality among patients with schizophrenia. Inadequate treatment using a variety of different medications may also have a limited effect and lead to long-term hospitalization [6].

Although changing and simplifying medication sometimes seems promising, patients, nurses, psychiatrists, and significant others may regard it as risky. This perception may obstruct adequate and rational treatment [7]. Many long-term residential psychiatric patients have a long and difficult treatment history, in which earlier relapses and perhaps aggression have made care professionals, relatives and even patients themselves cautious about change, thereby limiting the options for sensible and rational adjustments in medication. Nonetheless, it is also important to investigate whether treatment is still appropriate to the current diagnosis. If one is unsuited to the other, the result—as various studies have shown—will be incorrect treatment, over-treatment, and avoidable side-effects [8–12].

Regular, structured evidence-based multidisciplinary assessments and reassessments of diagnoses and treatment should thus be viewed not only as appropriate, but also as necessary [13]. Suokas et al. [14] showed that, as interventions in themselves, changes in medication prescriptions were not enough to maintain inputs intended to reduce medication. Despite this, we are aware of no studies that investigated the effects of thoroughly reassessing diagnoses and appropriateness of treatments in long-term residential psychiatric patients. (Under "treatments," we also include evidence-based pharmacological, psychological and psychosocial treatments.) We therefore developed the "Diagnose, Indicate, and Treat Severe Mental Illness" (DITSMI) model, a pharmacological protocol consistent with the current Dutch guidelines for re-assessing patients with SMI on the basis of unbiased multidisciplinary holistic diagnoses and appropriate treatment [15]. We expected implementation of the DITSMI model to produce (a) changed diagnoses that led to appropriate treatment, (b) substantial changes in prescriptions, (c) improvements in psychosocial functioning, and (d) changes in hospital-bed utilization.

Methods

The DITSMI model

Our objective with the DITSMI model was to develop a protocol for appropriate care in long-term residential psychiatric patients. The model was based on a number of concepts and interventions, including:

1. Holistic diagnosis, that is re-evaluating a patient with regard to various aspects of life—including psychiatric, somatic and social functioning—without relying solely on the DSM diagnosis established earlier by a psychiatrist in the residential setting.
2. Appropriate treatment, including a multidisciplinary treatment proposal derived from the holistic diagnosis formulated according to the current Dutch treatment guidelines [15].

Holistic diagnosis and appropriate treatment had to be based, besides the patient's anamnesis and nurse's observation, on an unbiased diagnostic process, taking account of the full spectrum of current symptoms and daily functioning. For this we used a set of standardized questionnaires, including the Health of the Nations Outcome Scale (HoNOS) [16,17,18]. The screener for intelligence and learning disabilities (SCIL) [19]), the autism spectrum quotient (AQ) [20], and the Positive and Negative Syndrome scale (PANSS) [21]. To gain a complete overview of a patient's condition, to understand their possible underlying strengths and vulnerabilities, and to identify early warning signs, we also interviewed close relatives.

The holistic diagnostic process was undertaken by a multidisciplinary team that included a psychiatrist, a psychologist, nurses, social workers, peer workers, and occupational therapists. This team reached its holistic diagnoses on the basis of a protocol, evaluating each case as if it were a new case—in many cases despite long histories of treatment. In the protocol, the following items were checked:

1. Whether a patient's anamnesis (or hetero-anamnesis), biography, DSM diagnosis, and psychiatric and psychological assessments were up-to-date.
2. Whether the current diagnosis fitted with the assessment.
3. The findings of screening instruments, routine outcome measures such as the HoNOS, adjacent test diagnostics, and developmental anamnesis.
4. Whether there should have been a second opinion or consultation with colleagues.

As well as a diagnosis according to DSM V categories, a holistic diagnosis was also given that contained information on the following:

1. Demographic data: age, gender, marital status, legal representative, and judicial title.
2. The patient's symptoms and problems, and how he/she experienced them.
3. Acute precipitating stressors or events.
4. The patient's own request and desires for help.
5. An estimate of his/her intelligence (IQ) and emotional intelligence (EQ).
6. Relevant underlying life events and traumas, but also protective factors.
7. Social context, such as partner, family, living circumstances, work, and daily activities.
8. Addictions.
9. Somatic/physical condition.
10. The patient's strengths.
11. A working hypothesis that included the categories above and the protective factors described.
12. The overarching treatment goals.

After the new holistic diagnosis was established, an appropriate treatment proposal was formulated. All patients were treated according to current guidelines, taking account of customized care when necessary. Each week, in line with the DITSMI model, psychoeducation and evaluation sessions of medication effects and side-effects were scheduled, in which the team members and sometimes the patient's close relatives were present. If a patient experienced adverse effect, or destabilized after switching medication, low-threshold contact with the psychiatrist was swiftly arranged. If a patient or the team noted side-effects, medication could be altered or even stopped through a shared decision-making process.

As well as a focus on medication change, DITSMI included a number of regular alternative treatment modalities that could be provided when necessary, such as psychotherapy, psychosocial interventions, financial support, and family participation.

Design

The study was conducted in a long-term residential setting and consisted of a longitudinal cohort study without control group in a consecutive patient sample. As data sources, we used regular chart information and routine outcome questionnaires [22].

Setting and participants

The study was conducted in a single 96-bed hospital in the eastern Netherlands. This apartment complex for long-term residential

psychiatric patients comprised various individually tailored treatment settings. Care was provided according to the Functional Assertive Community Treatment (FACT) model [23] All patients resident in December 2014 were included in the cohort.

Measures

Our aim was to determine how medication use, general functioning, and hospital bed utilization were affected by changes in diagnosis or appropriate treatment. In the database we included each change made in DSM IV diagnosis and in appropriate treatment between 2014 and 2017 (one record per change). Data from electronic files were extracted between January 1, 2013 and December 31, 2017. We studied four main outcome measures:

1. First, we counted the medication changes in the patient sampled, recording each change as one record per change. Prescriptions for medication were categorized in the following overall groups: first and second-generation antipsychotics, anticholinergics, benzodiazepines, anticonvulsants, tricyclic antidepressants, and selective serotonin reuptake inhibitors (SSRI). More specifically, we also counted the numbers of prescriptions for clozapine, olanzapine, lorazepam, and oxazepam, as these are the core of the guidelines.
2. Second, we used the HoNOS, assessed at least once a year. We analyzed scores above or below cut-off of 13 [16,17,18]. In a multidisciplinary team meeting in the first year of the study, nurses were trained in order to increase their skills in administering the HoNOS.
3. Third, bed utilization from 2012 to 2018 was calculated according to the length of stay (LOS) before during and after the DITSMI protocol. We ascertained the time psychiatrist, psychologist or social worker spent on treatment, direct time being the time spent in face-to-face contact and indirect time the time spent on administration or consultations.
4. Fourth, we performed a medical chart review covering a number of variables, such as side-effects, body mass index (BMI), comorbid somatic illness/illnesses, psychotherapy provided, and patient relapse (defined either as seclusion or as placement in a closed or forensic ward).

Analyses

We analyzed data of 94 patients resident at a long-stay ward on December 2014. Data were analyzed at two levels, the first being each treatment change. As a patient was likely to undergo between one up to five changes over time—either in diagnosis, medication, or outcome—one record in this database represented one change. The second level of analysis concerned each individual patient, where one record represented a patient before the implementation of the protocol and one record represented the same patient after implementation. In this second database we deliberately disregarded all the changes over time, but chose only the first and last finding on diagnosis, medication or outcome. "Before" was defined as chart information and HoNOS scores gathered in 2013 and 2014. "After" was defined as chart information and HoNOS scores gathered in 2017, or before discharge. Finally, we analyzed differences in LOS before and after the prevision of DITSMI.

For analysis we used descriptive statistics, performing simple analyses to compare data gathered before the implementation of the DITSMI model with data gathered during and after it. Proportional differences between the data gathered in these two periods were tested using chi-square statistics or independent student t test, when appropriate. Alpha was set at a p value of 0.05.

Results

Sample and patient characteristics

Eight patients in the total sample ($n = 94$) could not be evaluated because they had been discharged before treatment had started and follow-up measures could be extracted. Three patients did not complete the DITSMI model, having died before the end of the study due to cancer, heart attack, and choking on food (aged 57–61). The sample thus contained 83 patients for whom there was full data over the three-year study period. Table 1 presents the descriptive statistics of the sample, summarizing the main findings gathered from the medical charts, the diagnoses, and being admitted or not before and after the DITSMI program. Sixty-nine percent of the sample ($n = 57$) were male. The mean age at the start of the study was 49 years (SD = 11.8). Mean LOS at the start of the protocol was 20 years. By the end of the study period, 40 of the 83 patients included in the sample remained on the ward. Twenty-six had been discharged to psychiatric sheltered-housing facilities, two to a forensic institute, and four to a nursing home. Eight were living in the community. Three died after the study, all from cardiac arrest (aged 57–66).

Diagnosis changes

After the implementation of DITSMI, 49% of the DSM IV diagnoses and 67% of the treatment proposals changed. Developmental disorders, psychosis Not Otherwise Specified (NOS), mild or borderline intellectual functioning were diagnosed more often, and schizophrenia and bipolar disorder were diagnosed less often. As an example, Figure 1 shows the changes in diagnoses of schizophrenia before and after the implementation of DITSMI.

Medication changes

Medication changed in 67% of the patients. Use of first-generation antipsychotic medication decreased from 44% of the patients to 25%. Use of second-generation antipsychotic medication increased from 56 to 75%. Anticholinergic medication decreased from 35 to 19%. In line with this, side effects were observed in 38% of the patients before and in 23% of the patients after the treatment protocol. BMI was approximately 30 both before and after. Somatic comorbidity, assessed in data extracted from 2017, was observed in 53% of the patients.

Table 2 presents changes in medication in more detail. In total, the 83 patients who had completed the DITSMI model underwent 417 medication changes. Overall, the first change, from first-generation to second-generation antipsychotics, concerned an increase in prescriptions of olanzapine. Prescriptions of clozapine also increased. The decrease in first-generation antipsychotics was not related to a specific drug. There was also a clear decrease in the use of anticholinergic medication. With regard to benzodiazepine use, an increase in lorazepam prescriptions was accompanied by a decrease in oxazepam prescriptions, but not by an overall increase in benzodiazepine prescriptions. With respect to anti-depressants and anticonvulsants medication, no significant changes were observed.

Change in the HoNOS

Table 3 summarizes the HoNOS findings in the sample before and after the DITSMI protocol. We show the percentage of patients below cut-off. As one HoNos follow-up measure was lacking,

Table 1. Patient characteristics before and after the implementation of the DITSMI model

N = 83 patients	Before	After	*p*
Mean age	49 (SD 11.8)	52 (SD12.7)	
Mean duration of care history	21 (SD 8.9)	24 (SD 8.3)	
% men	69%	69%	
% partner	18%	18%	
Developmental disorder (autism, PDD-NOS ADHD)	6%	16%	0.028
Psychosis NOS	8%	19%	0.043
Schizophrenia	53%	36%	0.019
Schizoaffective disorder	8%	10%	0.773
Bipolar disorder	8%	2%	0.031
Depressive disorder	5%	4%	0.731
Personality disorder	4%	2%	0.173
PTSD	1%	5%	0.093
Mild or borderline intellectual functioning	4%	18%	0.002
Pedophilia	–	1%	–
Substance-abuse	21%	16%	0.419
% of resident patients	100%	60%	<0.001
Patients' mean (SD) overall length of stay in years	20.2 (8.7)	22.6 (9.0)	<0.001
Patients' mean (SD) length of stay in years since 2000	13.6 (7.8)	15.4 (7.2)	<0.001
First-generation antipsychotic medication	44%	25%	0.010
Second-generation antipsychotic medication	56%	75%	0.009
Clozapine	25%	39%	0.030
Anticholinergic medication use	35%	19%	0.023
BMI (mean, SD)	27.7 (5.0)	30.4 (5.3)	0.323
Side effects	38%	23%	0.028
Diagnosis changed		49%	
Treatment proposal changed		67%	
Medication changed		67%	
Somatic comorbidity		53%	
Was provided psychotherapy		16%	
Relapse as defined by coercive measure or transfer to intensive care wards		15%	
Discharge		35%	
Deceased		7%	

Abbreviations: PDD-NOS, Pervasive Developmental Disorder Not Otherwise Specified; ADHD, attention deficit hyperactivity disorder; Psychosis NOS, Psychosis Not Otherwise Specified BMI, body mass index; DITSMI, Diagnose, Indicate, Treat, Severe Mental Illness; PTSD, posttraumatic stress disorder; SD, standard deviation.

comparisons involved 82 patients. In the HoNOS scores, the percentage below cut-off of patients whose diagnosis had changed from 39 to 61%. Correspondingly, the percentage below cut-off for the change in treatment indication changed from 40 to 60%. Both changes were significant.

Length of stay and time spent by professionals

Figure 2 presents the trend in the LOS between 2012 and 2018. It shows a constant line between 2012 and 2014 and a steep decrease between 2015 and 2018 (reduction = −41%, standardized beta = −0.332, R^2 = 0.99, $p < 0.001$) which is associated to the number of discharges.

Table 4 shows that the total direct time (i.e., face-to-face contact) and indirect time (i.e., administration or consultation) professionals spent on the patient was 12% greater in the second year than in the first. In the third year, it was 31% lower than in the second. The extra investment of 12% in the first year after the implementation of DITSMI thus reduced total time by 22% in the third year.

Discussion

In this cohort study, we found that the implementation of the DITSMI model is associated with less medication use, better psychosocial functioning, less time spent by professionals and less

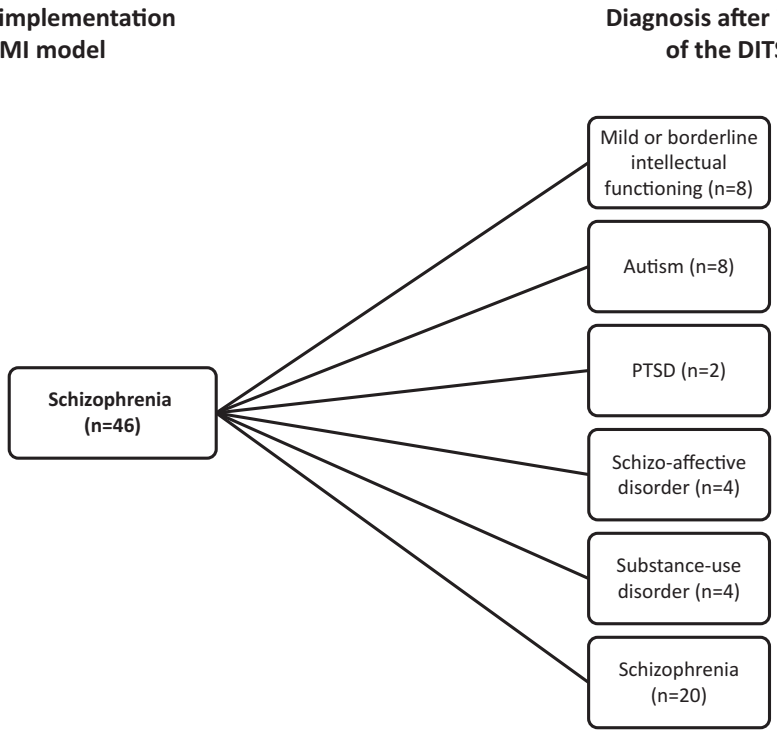

Figure 1. Changes in diagnoses of schizophrenia before and after the implementation of the model.

Table 2. Main medication changes before and after the implementation of the DITSMI model

N = 702 prescriptions, 417 changes	Before	After	*p* value
First-generation antipsychotic medication	81 (22.1%)	42 (12.9%)	<0.001
Second-generation antipsychotic medication	64 (21.2%)	100 (30.7%)	<0.001
Clozapine	44 (12.0%)	60 (18.2%)	0.021
Olanzapine	14 (3.8%)	36 (11.1%)	0.003
Biperideen	46 (19.9%)	24 (12.9%)	0.026
Benzodiazepines	101 (27.2%)	99 (29.8%)	0.459
Lorazepam	36 (7.1%)	52 (16%)	0.018
Oxazepam	43 (11.7%)	23 (7.1%)	0.033
Anticonvulsants	33 (9.0%)	29 (8.9%)	0.931
Antidepressant medication	34 (9.2%)	24 (7.3%)	0.346
SSRI	24 (6.5%)	19 (5.8%)	0.673
Tri-cyclic antidepressant	10 (2.7%)	5 (1.5%)	0.273
Number of prescriptions (denominator)	370	332	

Abbreviations: DITSMI, Diagnose, Indicate, Treat, Severe Mental Illness; SSRI, selective serotonin reuptake inhibitors.

bed utilization. As 49% of the diagnoses and 67% of the treatment indications changed, the model also led to a change in medication use. Similarly, the use of first-generation antipsychotics decreased, and the use of clozapine and other second-generation antipsychotics increased. The use of anticholinergic medication also decreased. Psychosocial functioning over time as expressed in the HoNOS scores showed some improvement. Extra time investment by professionals in the first year led to a total time reduction of 22% in the third year. Finally, due to 40 discharges, the LOS fell.

To the best of our knowledge, few naturalistic experiments have used holistic diagnoses and practice guidelines of this sort in long-term residential psychiatric patients, although Scheifes et al. [13] found a comparable number of changes in a somewhat smaller sample of patients in a residential setting for the intellectually disabled. Apart from a single opinion paper [24], no such figures have been reported within psychiatry. While some studies described efforts to rationalize medication in patients with SMI [7,13,25], these had little effect. As reported by Sterrenburg-Van de Nieuwegiessen et al. [3], some attempts even showed an increase in medication use, often after intervening crises. The same authors also described that it was common practice to prescribe considerable amounts of medication to long-term residential psychiatric patients with SMI.

Table 3. Association between diagnosis, treatment proposal, and improvement on the HoNOS before and after implementation of the DITSMI model

N = 82 patients[a]			HoNOS below cut-off[a]		*p* value
			Before	After	
Diagnosis	No change	41	18 (44%)	23 (56%)	0.269
	Change in diagnosis	41	16 (39%)	25 (61%)	0.041
Treatment proposal	No change	29	13 (45%)	16 (55%)	0.430
	Change in treatment proposal	53	21 (40%)	32 (60%)	0.032
			82	82	

[a]A cut-off of 12 or less was used [16].

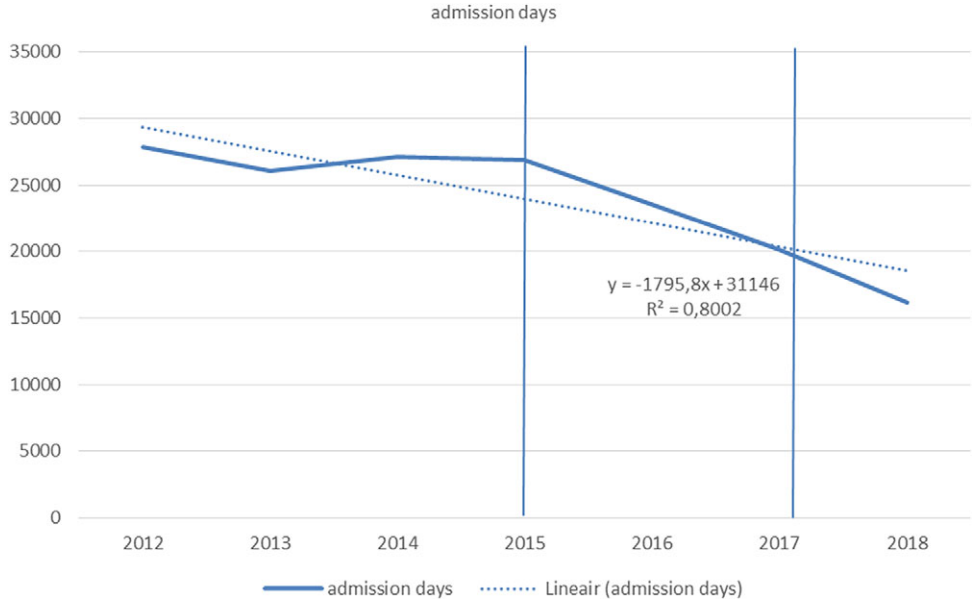

Figure 2. Length of stay of the cohort before, during, and after the treatment time frame.

Table 4. Main changes in the following: the direct time (face-to-face contact) and indirect time (administration or consultation) spent by professionals; for this sample over 2015, 2016, and 2017

N = 83	2015	2016	2017	*p*
Indirect time in minutes	10,773	12,108	8,651	0.001
Direct time in minutes	3,278	3,706	2,302	0.001
Total time in minutes	14,051	15,814	10,952	0.001

The construction of the DITSMI model is a simple one: it is an integrated care model that applies holistic and multidisciplinary diagnosis and appropriate treatment. It is based on applying current guidelines for this group of patients, many of whom do not receive treatment according to these guidelines. The fact that the wards in our study were an apartment building may have contributed to the number of discharges, as this building provided an environment where patients could get used to living in the community [26].

In our view, the core and innovating characteristic of the DITSMI model is that it represents a cultural change from the palliative-care environment of a nursing-home type of residential care to an active treatment model. For some patients, it was the first time they had been treated according to contemporary insights and the guidelines, even though the former had been developed in the last two decades.

As literature indicates, sustainable change is not produced solely by adjusting medication [3]. In addition to structured holistic diagnosis and drug treatment, the DITSMI model also focuses on other forms of therapy, including psychoeducation, psychological treatment, psychosocial treatment, and daytime activities that are consistent with the latest guidelines. In our view, once medication has been reduced, this way of working with long-term residential psychiatric patients provides more sustainable psychological well-being than would be possible solely by adjusting medication [13].

The DITSMI model is organized differently from contemporary care for patients with SMI, which is subject to three main difficulties. First, contemporary treatment focuses primarily on managing and preventing aggression and stabilizing symptoms. The time horizons also seem to be unlimited. Second, treatment can be fragmented, especially between institutional care and ACT or FACT teams. Third, as general practitioners share some responsibility with mental-health professionals in caring for people with SMI, communication problems can arise between different caregivers. In the DITSMI model, in contrast, treatment takes place within a stable multidisciplinary treatment team at a single location, and is limited not only with regard to time but also with regard to its continuation after treatment goals have been achieved.

The critical assessment of the medication prescribed under the model reinforces a more rational prescribing practice. If fewer psychotropic drugs are prescribed—in terms both of number and of dosage—side-effects such as sedation may be expected to be less. To these advantages we can add not only the overall improvement we found in the HoNOS scores, but also the reductions in the LOS and the need for care. If patients can move out of psychiatric hospitals into protected living facilities, and if they can receive outpatient counseling, health-insurance costs are likely to decrease further. For all these reasons, the large-scale implementation of the DITSMI model is likely to lead to a major reduction in common healthcare costs. However, an important comment with regard to the Netherlands is that bed utilization by long-term residential patients in psychiatric hospitals accounts for the greater part of these hospitals' healthcare yields. Financially, many psychiatric hospitals are thus partly dependent on this group of patients.

A notable issue in getting DITSMI implemented was the ward staff's fears with regard to changing medication. In our view, however, our study shows that, when done carefully, changing or reducing medication in a long-stay patient population can be successful. Medication adjustments are made in a structured fashion, and allow everyone involved to evaluate, think along, and be engaged in decision-making.

Strengths and limitations of the study

This study was performed in a category of patients who are sometimes neglected and do not always receive the care they need. One strength is that the patients remained included until the end of the 3-year study period (88%). Another is that this is one of the first studies to focus on long-term residential psychiatric patients. An earlier study that examined mechanisms for medication change did not consider the re-appraisal of diagnoses or the appropriateness of treatment [3].

While the naturalistic design was, in one sense, a limitation, it also improved clinical validity. We therefore see our results as valuable to psychiatric clinical practice and organizational development.

The DITSMI model is a simple model, which in this case was implemented at a single mental-health trust by multidisciplinary treatment teams. It is generalizable to other psychiatric services, where it can be implemented in full.

The main limitation is the absence of a control group. Our reason for this was the ethical difficulty of justifying the conduct of a double-blind study within a single hospital in which part of the sample received no DITSMI treatment. It is also possible that the sample was not representative for all residential psychiatric patients with SMI. Neither do we know the effect of the eight dropouts on outcome. A third limitation is that generalizability may be problematic, as we tested the DITSMI model in a single clinic comprising three wards. A fourth limitation is the possibility of a prescription bias on the part of the participating psychiatrists, as only two psychiatrists were responsible for prescriptions during the study. Although they worked on the basis of the current guidelines, they may also have had their own personal medication preferences. Fifth, it is conceivable that our estimation of the HoNOS before implementation was too favorable, and thereby reduced possible differences. The sensitivity of the HoNOS to measure change in these long-term residential and outpatient patients with SMI may also be questioned [18]. Finally, we should add that the sustainability of our findings and the long-term effects of the DITSMI intervention are yet to be studied.

Conclusions

Over the 3 years in which the DITSMI model was provided to long-term residential patients, 49% obtained a new diagnosis, 67% a new treatment proposal, and 67% different medication. Psychosocial functioning showed a limited change. Bed utilization decreased by 40% when patients moved to sheltered-housing or their own homes in the community, where they received outpatient treatment. Some were even discharged from care. Extra time investment by professionals in the first year led to a total time reduction of 22% in the third year. Given the results, DITSMI can be recommended as an appropriate form of care for all long-term residential psychiatric patients.

Acknowledgments. This study was conducted and reported in line with the STROBE Guidelines for reporting observational studies [27]. All procedures in the current study were performed in accordance with the ethical standards pertaining in 2014 for the Ethics Committee at the regional hospital in Enschede, the Netherlands; and with the 1964 Helsinki declaration and its later amendments and comparable ethical standards. Data analysis was performed on fully anonymized data. According to the legislation applicable in 2018, no informed consent was required, as the study concerned the evaluation of care provided. Medical-ethical approval for the study was provided by the ethical board at the University of Twente, Enschede, the Netherlands. Data were analyzed on the basis of fully anonymized data that allowed none of the cases to be traced to an individual.

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Data Availability Statement. Data for sharing findings (S1 Data) were provided to the Radboud Repository and may be requested by contacting the second author at E.noorthoorn@ggnet.nl.

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