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Work therapy for schizophrenic patients: Results of a 3-year prospective study in Germany

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Abstract Work therapy is a widespread form of sociotherapy. In contrast to pharmacological and somatic forms of treatment, proof of efficacy is difficult to produce in multimodal therapy of schizophrenic patients on account of the many methodological problems involved. Within the framework of an extensive study on the vocational rehabilitation of mentally ill patients, we carried out a naturalistic follow-up study of 83 schizophrenic patients attending outpatient work therapy. The sample, which comprised 44 men and 38 women with a mean age of 35 years (± 8.5 years), can be seen as regionally representative. The courses of illness and rehabilitation were documented prospectively at annual follow-ups over a 3-year period. Most of the probands were chronically mentally ill patients with a history of frequent and long-term hospitalisation. At the end of the 3-year period, 22% of the patients were integrated into the open labour market, 26% were working in sheltered employment, 23% were still in work therapy, and 29% were unemployed. Two-thirds had achieved their stated rehabilitation objectives. The 3-year rehabilitation outcome was strongly dependent on the patients' subjective expectations. Other factors proving to be predictors of successful rehabilitation were less pronounced psychopathological symptoms (ADMP), better social functioning (GAS), a higher level of education and an early introduction to work therapy. Work therapy appears to have a favourable impact on hospitalisation rates.

Key words Work therapy · Schizophrenia · Rehabilitation · Chronically mentally ill patients · Prospective study

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Introduction

Work therapy is a broadly applied, long-established sociotherapeutic treatment method whose practical value and efficacy are virtually undisputed among clinicians. It forms part of basic psychiatric therapy and is an essential element in the therapeutic environment of a hospital without its effects being empirically secured or differential aspects of the indication being open to discussion with adequate validity.

Practical implementation of and scientific confrontation with work therapy are characterised internationally by phases of marked interest followed by periods of neglect [13, 17, 22]. Rehabilitation through work was last the focus of intensive practical and scientific efforts in the 1960s and 1970s, especially in the United Kingdom. In conjunction with efforts being made by major psychiatric hospitals to discharge their chronically ill patients, work therapy was applied in the form of "industrial therapy" [5]. Its primary objective was dehospitalisation especially of chronically ill patients [5, 39]. Controlled studies [2, 14, 19, 21, 40] showed that patients participating in work therapy had better chances of being discharged or could be discharged earlier.

In recent years an increasing number of psychiatric hospitals in Germany have been offering work therapy to discharged patients. This organisational form of "outpatient work therapy" simplifies the transition between inpatient and outpatient treatment. Patients need not remain at the hospital merely to attend work-therapy programmes but can also test and develop their skills under realistic conditions [32]. The practice of work therapy is characterised by a high level of flexibility, with patients taking part in the programme for some hours on weekdays. Besides manual activities, there are increasing facilities for training in modern office communications. Initial diagnosis is followed by a therapeutic phase aimed at entry into competitive employment, into supported-employment projects or into sheltered employment. A few patients spend years in outpatient work therapy for lack of alternatives [31].

Like many other aspects of psychiatric care, outpatient work therapy has developed from the needs and under the focus of practical aspects. It is, however, lacking in adequate scientific evaluation. Previous studies have dealt with subjective attitudes and motivations of patients [33, 35], short-term therapeutic effects on psychopathological symptoms, psychological performance parameters, vocational orientation [25] and 1-year rehabilitation outcome [32]. Further international studies have investigated compliance [23], effects on patient insight [27] and influences on vocational integration [3]. Last, but not least, rehospitalisation rates [3] and the impact of adequate payment on rehabilitation outcome [4] have been analysed. These last two studies in particular deserve special mention on account of their high methodological standard (experimental conditions, control-group design) and their multidimensional evaluation of success (vocational integration, psychopathological symptoms, rehospitalisation rates).

The present study deals with the following questions:

1. What is the 3-year rehabilitation course of schizophrenic patients attending outpatient work therapy? What is the rehabilitation outcome?
2. Are there any predictors of successful rehabilitation?
3. What correlations are there between the courses of illness (rehospitalisations, psychopathological symptoms) and of rehabilitation?

Patients and methods

This study is a selective project within an extensive prospective, multicentre, longitudinal study on the vocational rehabilitation of mentally ill and disabled patients in the northern German region of Westphalia-Lippe. Details of the recruitment procedure and the setup of the overall study are reported elsewhere [10, 32]. The patients came from 7 of the 11 work-therapy departments at the psychiatric hospitals in the region. The rehabilitation courses were documented with annual follow-ups for a 3-year period. This paper presents the results for only the 91 schizophrenic patients, 83 (91%) of whom could be followed-up for 3 years. The dropout rate was thus low; no differences were recorded between dropouts and remaining patients.

At the baseline interview, data on case history, employment history, social integration and treatment were recorded in addition to sociodemographic basic data. Classification of psychiatric diagnoses was based on ICD-10 criteria. The psychopathological findings were based on the AMDP [1], an instrument which distinguishes between eight syndromes and is in routine use in German-speaking countries. Six syndromes (apathetic, depressive, organic, paranoid-hallucinatory, manic and hostile syndromes) are suitable for rating chronically mentally ill patients. Social functioning was rated in accordance with the Global Assessment Scale [11], and subjective job satisfaction with a standard questionnaire on job satisfaction (ABB) [30] also in routine use in Germany. At the annual follow-ups, any changes in work situation, social integration and treatment were recorded. New psychopathological findings were registered, the degree of social functioning was determined and job satisfaction was continuously documented. Rehospitalisations and treatments at day hospitals were registered according to number and duration.

Eighty-three schizophrenic patients (44 men, 39 women) with a mean age of 35 years (SD ± 8.5 years) were enrolled in this study. The fact that the majority (81%) were unmarried, and that 48% were living in sheltered accommodation, one quarter still or once again with their parents and only 28% on their own, suggested poor social integration. Whereas almost two thirds (n = 50) had a selective secondary school leaving qualification, less than half (n = 39) the patients had completed a vocational training course. None of them had a currently valid employment contract. Sixteen patients had never been gainfully employed, and the rest had not been gainfully employed for a mean period of 62.6 months (± 9.9 months). The median was 36 months, and the range from 4 to 420 months.

The majority were chronically ill patients with a mean period since first onset of 10.3 years (± 8.5 years) and a history of frequent (x = 3.5 ± 4.2) and long-term (x = 44 months, ± 88.2 years) psychiatric hospitalisation. The psychopathological symptoms were predominantly depressive and apathetic. The mean GAS score was 55 (± 8.8). All 83 patients were undergoing medical treatment at baseline, and all but 5 were being prescribed neuroleptic medication for relapse prevention.

At the time of the baseline interview, 57 patients (69%) had been attending the outpatient work therapy for less than 12 months (mean 3.5 months, ± 2.8 months). The other 26 patients had been attending the course longer (mean 39.7 months, ± 39.7 months). The mean weekly duration of work therapy was 18.8 h (± 8.3 h), though subject to a broad range of 4–38 h. For the medium-term vocational future, 41% of the patients were expecting to change to the open labour market, whereas the same proportion predicted that they would remain in outpatient work therapy. The remaining patients expected to change to sheltered employment (n = 8), to drop out of work therapy (n = 2) or had no clearly formulated expectations (n = 5).

Results

Rehabilitation courses

The 3-year rehabilitation courses can be divided into five types, with very homogenous groups of patients resulting. Type 1 (n = 16): These patients changed from work therapy to the open labour market, where they remained vocationally integrated throughout the study period. Prior to this change, they had been attending work therapy for a mean period of 20.3 months (± 17.1 months), though with a broad range from 5 to 64 months and a median of 12.5 months. Successful developments can thus be recorded even after some years of rehabilitative measures. Type 2 (n = 17): These patients tried out one or more jobs on the open labour market during the 3 years but achieved no stable vocational integration and were meanwhile unemployed or in various kinds of sheltered employment, or resumed the work therapy. Most of these attempted jobs were held for less than 6 months. The time spent by these patients in work therapy was very wide-ranging: between 4 and 53 months, with a mean period of 19.7 months (± 16.1 months). Type 3 (n = 19): These patients changed from work therapy to sheltered employment in workshops for the disabled or social firms, where they remained. The mean time spent in work therapy as preparation for this change was just under 2 years (23.8 months, ± 16.8 months). Type 4 (n = 18): These patients remained – in some cases with brief interruptions – in outpatient work therapy. At the end of the study period, the mean time spent by this group in work therapy was 70.5 months (± 51.9 months). In practical terms, then, this is a permanent occupation for which these patients have no alternative but unemployment. Type 5 (n = 13): These patients

dropped out of work therapy and remained unemployed for the rest of the study period. The most frequent reasons for dropping out were motivation problems, excessive stress or relapses. The mean time spent in work therapy prior to dropping out was 18.9 months (± 12.4 months).

Objective evaluation

The first criterion for evaluation of success was the level of integration achieved in working life by the end of the 3-year study period [6]. Rehabilitation was described as *very successful* in 18 patients (22%) who were employed on the open labour market or had attained a comparably high rehabilitation goal (training, degree course). Rehabilitation was described as *successful* in 22 patients (26%) who were gainfully employed at a sheltered workplace outside the hospital after 3 years. The fact that 19 patients (23%) were still occupied in work therapy after 3 years is rated as *a minor success*. Unemployment, which was rated as a *failure*, applied to 24 patients (29%). If the objective success rating is applied only to the 34 patients whose subjective rehabilitation objective at baseline was reintegration into the open labour market, then the proportion of very successfully rehabilitated patients rises to 35%.

Subjective evaluation

As a second criterion, success is rated on the principle of goal attainment [20, 26], depending on whether the patients achieve the goals they set for themselves. This procedure acknowledges in particular that many chronically ill patients have no (further) ambition to make "progress" or to be integrated into the open labour market. The vocational expectations expressed at baseline were compared with the 3-year outcome (Table 1).

According to these criteria, 63% of the patients met or even exceeded their aims and expectations, and in this sense were successfully rehabilitated. For the remaining third, the rehabilitation outcome fell short of the initially expressed expectations to some degree.

Prediction

Comparison of the 18 successfully reintegrated patients with the remaining 65 whose rehabilitation was less successful reveals the following significant differences when baseline data are subjected to monovariate analysis: The 18 successful patients started rehabilitation through work therapy at an earlier stage, the duration of illness was shorter (6.6 years, ± 4.4 years vs 11.4 years, ± 9.1 years), and they were hospitalised less frequently and for an overall shorter period. Any employment contracts were significantly more recent (35 months, ± 38.3 months vs 71 months, ± 81.9 months). The successful patients also had less pronounced psychopathological symptoms (total AMDP score) and displayed better social functioning (GAS score). They also tended to have a higher level of education. Of the subjective parameters, the expectations expressed at baseline proved to be significant predictors: 67% of the successfully rehabilitated, but only 33% of the other patients, had expected reintegration on the open labour market ($\chi^2 = 4.99$, $p < 0.05$).

Rehospitalisation and course of rehabilitation

The rehospitalisation rates were between 24 and 32.5% per year. During the overall 3-year study period, 41 patients (49.5%) were rehospitalised at least once. Significant correlations were recorded between course of vocational rehabilitation and rehospitalisation rates (Table 2). Both the highly successful patients (type 1) and those who remained permanently in work therapy (type 4) were rehospitalised significantly less frequently and for significantly shorter periods than those patients whose rehabili-

Table 1 Vocational expectations at baseline and three-year rehabilitation outcome of 78 schizophrenic outpatients

Expectation at baseline		Achieved after 3 years (n = 34, 44%)	Exceeded after 3 years (n = 15, 19%)	Shortfall after 3 years (n = 29, 37%)
Open labour market	(n = 34)	12	–	22
Sheltered employment	(n = 8)	7	0	1
Remain in work therapy	(n = 34)	15	13	6
Unemployment	(n = 2)	0	2	–

NOTE: Five patients with undefined expectations are not included

Table 2 Three-year course of vocational rehabilitation and rehospitalisation of 83 schizophrenic patients in outpatient work therapy

Course type	No. of hospitalised patients	Mean no. of hospitalisations	Length of hospitalisations (mean, in weeks)
Type 1 (n = 16)	5 (31.3%)	0.6 (± 1.1)	6 (± 12.5)
Type 2 (n = 17)	11 (64.7%)	1.7 (± 1.8)	14 (± 17.1)
Type 3 (n = 19)	11 (57.9%)	1.0 (± 1.1)	10 (± 16.8)
Type 4 (n = 18)	4 (22.2%)	0.4 (± 0.9)	5 (± 9.9)
Type 5 (n = 13)	10 (76.9%)	2.2 (± 2.2)	36 (± 38.2)

Table 3 Rehospitalisations of 57 schizophrenic patients 3 years before and after start of outpatient work therapy

NOTE: Only the 57 patients who started work therapy less than 12 months before baseline χ^2 or Wilcoxon test: * $p < 0.05$; ** $p < 0.01$

	Mirroring period (3 years before start of outpatient work therapy)	Study period (3 years after start of outpatient work therapy)
No. of hospitalised patients	$n = 51$ (89.5%)	$n = 30$ (52.6%)**
No. of hospitalisations	x = 1.5 (SD ± 1.0)	x = 1.2 (SD ± 1.6)*
Duration of hospitalisations	x = 35 weeks (SD ± 29.7)	x = 15.6 weeks (SD ± 24.9)**

tation courses were characterised by frequent job changes, failure to achieve integration into the open labour market or a change into long-term unemployment (types 2, 3, 5).

Besides the finding that patients remaining permanently in work therapy were rehospitalised exceptionally infrequently, mirroring analysis suggests that attendance at work therapy may have a positive impact on rehospitalisation rates. We compared the number and total duration of psychiatric hospitalisations in the 3 pre-study years with the corresponding data from the 3-year study period. To prevent the results from being distorted through long-term attendance at outpatient work therapy by some patients prior to the baseline interview, we confined the comparison to those 57 patients who had been less than 12 months (mean 3.5 months, SD ± 2.8 months) in outpatient work therapy prior to baseline examination (Table 3).

The patients were hospitalised less frequently and in particular for shorter periods during or after attendance at work therapy than in the 3 years preceding the intervention. The mean number of hospitalisations in the 3 years preceding the start of work therapy was 1.5 and the mean duration 35 weeks. During the 3-year study period, the mean values for the number of hospitalisations fell to x = 1.2 and for the duration to x = 15.6 weeks. In the 3-year study period, 30 patients were hospitalised compared with 51 in the 3 years preceding the start of outpatient work therapy.

Psychopathology and course of rehabilitation

Comparing symptoms at baseline with the status after 3 years, we found no significant change in the overall psychopathological status (total AMDP score) for the overall sample. With respect to the separate syndromes [15] a significant increase in depressive and a reduction in psychoorganic syndromes were recorded. Differentiation according to the five types of rehabilitation course provides the following picture: Very successful patients (type 1), who were subject to less stress from psychopathological symptoms at baseline, remain at that level and their apathetic symptoms decline still further. In those patients failing repeatedly in their attempts at vocational integration (type 2) or changing to sheltered employment (type 3), the psychopathological symptoms remain constant overall throughout the 3-year period – though at the more pronounced level recorded at baseline. The same applies to those patients remaining in work therapy throughout the study period but displaying a significant reduction in psychoorganic symptoms. In contrast, an overall increase in symptoms (total AMDP score), due primarily to the increased proportion of apathetic symptoms, was recorded among patients dropping out of work therapy and remaining unemployed in the longer term (type 5). Analysis of the annually recorded psychopathological findings suggests that the increase in symptoms among these unsuccessfully rehabilitated patients is the outcome, rather than the cause, of their unemployment. However, the subsample size is too small for statistical verification.

Discussion

We investigated the course and outcome of work therapy for neuroleptically treated schizophrenic outpatients in a naturalistic, prospective design over a 3-year period. The aim was to draw conclusions on the medium-term effects of this widespread sociotherapeutic method which is clinically recognised but inadequately researched. The methodological standard had to be reduced to enable a large patient sample to be followed-up for some years. For practical and ethical reasons no control group could be formed. Under strict scientific criteria, this limits interpretation of the results. The design and the methodological standard of the study (regionally representative sample, prospective over a 3-year period, multicentred) are, however, to be assessed against the background of research into vocational rehabilitation, which has come to a virtual standstill. The few controlled studies available on (vocational) rehabilitation of mentally ill patients rarely take account of longer follow-up periods and the numerous levels making up the process of rehabilitation [overviews in 6, 7, 9, 24, 29]. The present study covers psychopathological findings, course of illness, vocational integration and subjective rating of the success of the rehabilitation.

Under a broader criterion of success, 48% of the mostly chronically ill patients were successfully rehabilitated after 3 years because they were in paid employment outside a psychiatric hospital. However, the rehabilitation was not successful in over one quarter of the patients. The number of successes has to be seen as satisfactory against the background of the degree of illness, the current job-market situation, the mostly long-term vocational withdrawal and the experience reported in comparable studies [12, 18, 37]. When classifying the results it should also be borne in mind that vocational integration is not a realistic or subjective goal for all chronically ill patients. If the success rating is confined to the subjective aims of those

concerned, two thirds of the patients achieved the objective set by them and in this sense were successfully rehabilitated.

Rehabilitation outcomes can be predicted only to a limited extent on the basis of individual qualifications. Only school-leaving qualifications above secondary-modern standard proved to have predictive validity. Contrary to expectations [8, 39], the extent of previous vocational experience or vocational qualification had no impact on the outcome of the rehabilitative measures. Most probands were chronically ill patients whose vocational experience – if any – was long past. One finding of practical significance is that an early introduction of rehabilitative measures proved favourable. Patients with a shorter duration of illness, fewer hospitalisations and shorter periods of unemployment have better chances of vocational reintegration. Other predictors of success are less pronounced psychopathological symptoms and a good level of social functioning. A successful outcome of work therapy in terms of vocational reintegration can thus be expected only for patients with very favourable preconditions.

Very successful vocational rehabilitation is accompanied by low rehospitalisation rates, and unsuccessful rehabilitation by numerous relapses and high rehospitalisation rates [34]. The causality of the correlation must, however, be left open: patients remaining in work therapy for 3 years suffered the lowest number of relapses requiring rehospitalisation. This suggests that outpatient work therapy has a relapse-preventive effect, an effect confirmed by controlled studies. In the previously mentioned study by Bell and Ryan [3], the programme focusing on vocational rehabilitation proved superior after 18 months, with reference to both the vocational integration and the relapse rate of the two comparison groups (psychoanalytically oriented therapy programmes). In an overview, Bond [7] found that more than half the 17 controlled studies reviewed reported a positive impact of vocational rehabilitation programmes on the rehospitalisation rate. On the other hand, remaining in work therapy may also be associated with therapeutic resignation, with patients using the work therapy as a day centre and with no special achievement being expected of them.

Further indications of a favourable impact of work therapy on rehospitalisation rates are supplied by the results of mirroring analysis, which shows that rehospitalisations during or after attendance at work therapy are less frequent and above all shorter than during the comparable pre-therapy period. Different reasons can be put forward for this finding: the patients were taking part in a long-term, time-intensive, therapist-intensive rehabilitative intervention. They underwent comprehensive training in cognitive and social skills. In addition, the proximity to the hospital permitted rapid detection of relapses and rapid medical intervention. Some criticism must, however, be levelled at the methodological limitations: in particular, our design fails to offer adequate control of the details of medical treatment and medication in the mirroring period or of the effects of other psychosocial interventions or life events.

Related to all patients, the psychopathological symptoms remained essentially constant over the 3-year period, with the proportion of psychoorganic syndromes declining. From the clinical aspect, it seems understandable and reasonable that a reduction in symptoms such as disturbances of concentration, memory and perception should be induced by the training in the work therapy programme. When scientific criteria are applied, however, this finding is difficult to evaluate without a control group. The majority of hypotheses concerning the impact of work therapy on symptoms have not been verifiable in controlled studies [28, 36, 41]. Only the study by Bell and coworkers [4] showed that participation in a vocational therapy programme leads to a significant reduction in psychopathological symptoms, depending on underlying conditions (payment, workplace, etc.). Especially with respect to patients who lost their jobs and whose symptoms, especially negative symptoms, increased, it can at least be recorded that outpatient work therapy may contribute towards stabilisation of the psychopathological status.

Treatment times in work therapy vary considerably. Changes are registered in some patients after just a few months, but in others after several years. According to Goldberg et al. [16], sociotherapeutic interventions based essentially on learning processes cannot be expected to take effect for at least 6–12 months. To this extent, positive vocational changes after a few months are to be seen as spontaneous courses, rather than as therapeutic effects. Conversely, the developments after 1–2 years of work therapy are often an outcome of the intervention. Patients may drop out of work therapy due to excessive stress or to insufficient motivation and therapeutic insight. Most of these dropouts have unrealistic expectations and fail on the labour market.

The results of this longitudinal study of a regionally representative group of chronic schizophrenic patients provide numerous arguments backing the claim that outpatient work therapy contributes to improved vocational integration, to a reduced relapse rate and to stabilisation of the psychopathological status. Yet doubt remains concerning the extent to which these effects are specific to this form of sociotherapy. Moreover, further research is needed on the differential indication of work therapy within a multifocal rehabilitation programme. A relatively broad basis, the numerous advantages offered for a treatment strategy and the high level of acceptance by patients are factors opposed by currently underdeveloped, insufficiently discussed implementation principles and a lack of interest among researchers.

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