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INVITED REVIEW

S3 guideline on psychosocial therapies in severe mental illness: evidence and recommendations

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Abstract The burden of severe and persistent mental illness is high. Beside somatic treatment and psychotherapeutic interventions, treatment options for patients with severe mental illness also include psychosocial interventions. This paper summarizes the results of a number of systematic literature searches on psychosocial interventions for people with severe mental illness. Based on this evidence appraisal, recommendations for the treatment of people with severe mental illness were formulated and published in the evidence-based guideline series of the German Society for Psychiatry, Psychotherapy and Neurology (DGPPN) as an evidence-based consensus guideline ("S3 guideline"). Recommendations were strongly based on study results, but used consensus processes to consider external validity and transferability of the recommended practices to the German mental healthcare system. A distinction is made between system-level interventions (multidisciplinary team-based psychiatric community care, case management, vocational rehabilitation and participation in work life and residential care interventions) and single psychosocial interventions (psychoeducation, social skills training, arts therapies, occupational therapy and exercise therapy). There is good evidence for the efficacy of the majority of psychosocial interventions in the target group. The best available evidence exists for multidisciplinary team-based psychiatric community care, family psychoeducation, social skills training and supported employment. The present guideline offers an important opportunity to further improve health services for people with severe mental illness in Germany. Moreover, the guideline highlights areas for further research.

Keywords Guidelines · Severe mental illness · Community mental health care · Psychosocial therapy · Efficacy

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Introduction

Severe mental illness (SMI) is characterized by psychiatric disorders which continue over time and contribute to serious difficulties in personal and social functioning, thereby reducing the quality of life of the affected person. The prevalence of SMI and the burden related with it is high. An epidemiological study in Europe on the prevalence of SMI reports a total annual prevalence rate of 2.33 per 1,000 for all disorders [1]. People with SMI differ significantly from people with psychiatric disorders other than SMI; they are more likely unmarried, unemployed, show higher levels of psychopathology and disability and utilize services more often [2]. Patients with SMI have poorer physical health and a reduced life expectancy compared to the general

population [3–7]. There are data suggesting that patients with SMI die on average between 12 and 32 years earlier than the general population [7, 8].

The burden of mental illness is high. It is estimated that 7.4 % of DALYs [sum of years of life lost (YLLs) and years lived with disability (YLDs)] worldwide are due to mental disorders. The main causes of this are unipolar depression and anxiety disorder, alcohol disorder and schizophrenia. The disease burden related to mental disorders increased from 5.4 % of all DALYs in 1990 to 7.4 % of all DALYs in 2010 [9]. A recent study using years of potential life lost (YPLL) as a measure of premature mortality showed that the mean YPLL in patients with SMI was 14.5 compared with 10.3 for the general population [10].

The consequences for the individual and for society are severe. Mental illnesses top the list of health problems leading to occupational disability and retirement [11] and cause more than €28 billion in direct illness costs and €26 billion in indirect illness costs. In Germany, mental illnesses generate about 11 % of the annual direct costs and about 18 % of all lost years of work [12]. Mental health care is only one type of service required in treating the chronically mentally ill. Support in housing, social and rehabilitation services, medical care and basic minimum maintenance needs also should be taken into account [13].

For example, severely mentally ill people suffer from chronic medical illness at a higher rate than the general population. Among persons with serious mental illness, the frequency of physical health problems is reported to be 50–90 % higher than among general psychiatric outpatients [14]. A report of a literature review on studies examining length of stay, costs of care and resource utilization in individuals hospitalized in general medical-surgical settings showed increased measures for those patients with psychiatric comorbidity [15].

Although these facts are generally recognized and addressed, individuals with severe and persistent mental illness (e.g., those individuals most in need) were identified as increasingly underserved within the German healthcare system [16]. In many instances, the focus is on acute, episode-specific single interventions such as medication which are known to have a short-term effect on symptom reduction. Increasingly, psychotherapeutic and psychosocial interventions for people with SMI are demanded and considered indispensable in mental healthcare systems [17].

However, the full spectrum of psychosocial interventions for individuals with SMI is rarely implemented [18], although psychosocial interventions, in general, have much to offer to improve treatment outcome. Healthcare professionals may consider such interventions not evidence based or difficult to implement as studies are complex or implementation requires system-level change. It is, however, the task of mental health professionals to inform healthcare planners with regard to the effectiveness of complex interventions and to give recommendations in the absence of conclusive evidence. Treatment processes are insufficiently understood in care for people with SMI, and this also applies to the question of how mental health care for this patient group is best organized and delivered. There has recently been an emphasis on implementation research [19, 20], but the effect of variations in the mode of care delivery on treatment process and patient outcome is not adequately understood. MacInnes et al. [21] and Priebe et al. [22] have studied interventions that impact on the way care is delivered by changing clinical discourse between clinicians and patients, and they have linked this approach to earlier studies of care based on patient needs and computer-aided communication. We need to combine this emphasis on treatment process with individual mental health interventions, i.e., building blocks of psychosocial care such as art therapy and also with interventions optimizing team-based care.

In order to develop an evidence-based guideline on psychosocial interventions for people with SMI, the German Association for Psychiatry, Psychotherapy and Psychosomatics (DGPPN), under the supervision of a guideline methodologist representing the Association of Scientific Medical Societies in Germany (AWMF), appraised the study evidence and developed recommendations on mental health care. Therefore, the guideline is based on the best available scientific evidence and the experience of healthcare professionals and representatives of people with SMI and their relatives.

Interventions addressed in the guideline presented in this article provide building blocks of psychiatric care, and these building blocks are firmly rooted in research evidence presented in this article.

Methods

The guideline targets all professionals treating adult patients aged 18 and over with severe and persistent mental illness. Serious mental illness is defined as follows: (1) the presence of a mental disorder (major depression, schizophrenia and other psychotic disorders, bipolar disorder, obsessive compulsive disorder, borderline personality disorder), (2) duration of mental illness and/or of service contact of 2 years or more, (3) severe social dysfunction as measured by a scale for assessing social functioning (e.g., Global Assessment of Functioning, GAF Scale) [1]. Therefore, recommendations are relevant for patients, their relatives, professionals in primary and secondary healthcare settings, mental health teams and for rehabilitation, residential, community, social and employment service providers. It could also be useful for people who are responsible for planning and providing health and social services.

Table 1 Topics for evidence search

System-level interventions	Single psychosocial interventions	Cross-cutting issues
Multidisciplinary team-based psychiatric community care	Psychoeducation	Therapeutic milieu
Case management	Social skills training	Empowerment
Vocational rehabilitation and participation in work life	Arts therapies	Recovery
Residential care interventions	Occupational therapy	Peer-led interventions
	Exercise therapy	Self-help

Interventions

The guideline gives recommendations on psychosocial interventions other than pharmaceutical or psychotherapeutic ones. The term refers to a spectrum of psychosocial and social intervention programmes, which have been grouped into three categories (Table 1). These interventions aim to improve individual and social functioning, enhance quality of life and support the community integration of people with SMI. This paper focuses on system-level and single psychosocial interventions.

Guideline development process

The guideline was developed between 2009 and 2011 and edited by the German Association for Psychiatry, Psychotherapy and Psychosomatics (DGPPN). DGPPN was founded in 1842 and currently has more than 7,000 members. It is the largest and oldest scientific association of doctors and scientists working in the field of psychiatry, psychotherapy and psychosomatics in Germany. One task of the DGPPN is the development of evidence-based guidelines and scientific statements.

The development of the guideline drew upon methods outlined by the Association of Scientific Medical Societies in Germany (AWMF). There are several basic steps in the process of developing a guideline according to AWMF classification (http://www.awmf.org/fileadmin/user_upload/Leitlinien/AWMF-Regelwerk/AWMF-Guidance_2013.pdf):

- Form an expert and a consensus group including important stake holders and patients.
- Define clinical questions which are considered as important for practitioners and service users.
- Devise a thorough search strategy.
- Conduct a systematic literature search, selection and appraisal of studies and exact documentation of results.
- Synthesize data retrieved, guided by the clinical questions.
- Produce evidence summaries.
- Draft preliminary recommendations including allocation of strengths of recommendation.
- Enact formal/structured voting procedure within consensus group meetings (nominal group technique, Delphi, structured consensus conferences).

Creation of the guideline development group (GDG)

The guideline development group (GDG) consisted of a steering group, an expert group (17 experts) and a consensus group (representatives from 40 stakeholder groups) and was composed of professionals in psychiatry, community psychiatry, geriatric psychiatry, child and adolescent psychiatry, psychotherapy, clinical psychology, nursing, general practice, occupational therapy, arts therapies, social work, sociotherapy, health insurance, vocational rehabilitation and exercise therapy; academic experts in psychiatry and psychology; and representatives of patients and relatives. The guideline development process was supported by a steering group that conducted the clinical literature searches, reviewed and presented the evidence at the consensus meetings, managed the process and contributed to drafting the guideline. The professional direction and supervision were carried out by a guideline methodologist of the AWMF. The guideline was also reviewed by an external reviewer.

Literature search strategy

The aim of the literature review was to systematically identify and synthesize relevant studies from the literature to answer the specific clinical questions developed by the GDG. Thus, clinical practice recommendations are evidence-based where possible and, if study evidence was not available, systematic consensus methods were used (good practice point, GPP). A stepwise, hierarchical approach was taken to identify the evidence. First, a search was undertaken for systematic reviews and guidelines published on each topic. We included well-conducted randomized controlled trials (RCTs), and for some interventions also non-RCTs. The search was exhaustive, using several databases and other sources. Standard health-related bibliographic databases (Cochrane Library, EMBASE, MEDLINE, PsycINFO) were used for the initial search for all studies potentially relevant to the guideline. In addition,

Table 2 Categories of evidence

Ia	Evidence obtained from a single, large randomized trial or a meta-analysis of at least three randomized controlled trials
Ib	Evidence obtained from a small randomized controlled trial or a meta-analysis of fewer than three randomized controlled trials
IIa	Evidence obtained from at least one well-designed controlled study without randomization
IIb	Evidence obtained from at least one other well-designed quasi-experimental study
III	Evidence obtained from well-designed, non-experimental descriptive studies, such as comparative studies, correlation studies and case studies
IV	Evidence obtained from expert committee reports or opinions and/or clinical experiences of respected authorities

Table 3 Grading of recommendations

A	*Strong recommendation* At least one randomized controlled trial as part of a body of literature of overall good quality and consistency addressing the specific issue (evidence levels Ia and Ib) without extrapolation
B	*Weak recommendation* Well-conducted clinical studies but no randomized clinical trials on the topic of the issue (evidence levels IIa, IIb, III) or extrapolated from level I evidence
0	*Open recommendation* Expert committee reports or opinions and/or clinical experiences of respected authorities. This grading indicates that directly applicable clinical studies of good quality are absent (evidence level IV), or with extrapolation from higher levels of evidence
GPP	*Good practice point* Recommended good practice based on the clinical experience of the GDG and arrived at through consensus

we included specific databases (e.g., OTSEEKER.com, OTDBASE.org, CINAHL.com). We also checked the reference lists of all eligible systematic reviews and included studies, as well as the list of evidence documents submitted by stakeholders. In all databases, we included only articles written in English and German. There was no limit with regard to the publication period. The search was carried out between June 2009 and February 2011.

Development of recommendations

The selected papers were assessed with regard to their methodological quality. The methodological assessment was based on a number of questions that focused on those aspects of the study design which have been shown to influence the validity of the results reported and conclusions drawn. The result of this assessment had an influence on the level of evidence, which in turn influenced the strength of recommendation. Evidence tables summarize all the included studies from the systematic literature review relating to each key question. Evidence was classified according to an accepted hierarchy (Table 2). The GRADE approach was the basis for grading the quality of evidence and strength of recommendations [23]. Recommendations were graded A, B or 0 based on the level of the related evidence or were referred to as "good practice point" in those cases where no study evidence was possible or available (Table 3).

All recommendations in the guideline have been approved in their present form by the consensus group using a nominal group technique applied during the consensus group meetings. The report on the methodology is publicly accessible via the Internet (see: http://www.dgppn.de/dgppn/struktur/referate/versorgung0/s3-leitlinie-psychosoziale-therapien-bei-schweren-psychischen-erkrankungen.html).

Results

System-level interventions[1]

Multidisciplinary team-based psychiatric community care

Community mental health teams (CMHT) are the basic building block for community mental health services in the UK. The simplest model of provision of community care is for generic (non-specialized) teams to provide the full range of interventions (including the contributions of psychiatrists, community psychiatric nurses, social workers, psychologists and occupational therapists). CMHTs prioritize adults with SMI and operate within a locally defined geographical catchment area [24]. The CMHT management approach has been found to result in greater treatment satisfaction and reduced hospital admission rates compared with standard care [25] (see Table 4).

Services that offer emergency assessment and intensive home treatment as an alternative to acute hospital admission

[1] A complete overview of identified evidence can be found in the full version of the guideline.

Table 4 Summary of evidence from systematic reviews and meta-analyses of psychiatric care systems

Package of care	Included works	Control group	Outcomes	Evidence level
Community mental health teams	Malone et al. [25] Cochrane Review	Non-team standard care 3 RCTs	⇓ Hospital admissions rates ⇓ Not satisfied with care ⇔ Mortality ⇔ Leaving the study early	Ia
	Meta-analysis of NICE guideline schizophrenia [28]	Non-team standard care 3 RCTs	"Evidence insufficient"	Ib
Crisis resolution teams and home treatment	Joy et al. [27] Cochrane Review	Hospital-based treatment 5 RCTs	⇓ Leaving the study early ⇑ Satisfied with care, patients and families ⇓ Family burden ⇔ Mental state ⇔ Mortality	Ia
	Meta-analysis of NICE guideline schizophrenia [28]	Hospital-based treatment 6 RCTs	⇓ Hospital admissions rates ⇓ Duration of acute inpatient care ⇑ Satisfied with care, patients ⇓ Leaving the study early ⇓ Economic costs	Ia–Ib
Assertive community treatment	Marshall et al. [30] Cochrane Review	Standard community care 17 RCTs	⇓ Leaving the study early ⇓ Hospital admissions rates ⇓ Duration of inpatient care ⇑ Satisfied with care, patients ⇑ Living independently ⇓ Homeless ⇓ Unemployed ⇔ Mental state ⇔ Social functioning ⇔ Quality of life	Ia–Ib
		Hospital-based rehabilitation 3 RCTs	⇓ Hospital admissions rates ⇓ Duration of inpatient care ⇑ Living independently ⇔ Mental state ⇔ Social functioning ⇔ Quality of life	Ia–Ib
		Case management 6 RCTs	⇑ Stable accommodation ⇑ Satisfied with care, patients	Ib
	Meta-analysis of NICE guideline schizophrenia [28]	Standard community care 6 RCTs	⇑ Remaining in contact with services ⇓ Hospital admission rates ⇑ Satisfaction with care ⇓ Homeless ⇑ Living independently ⇓ Unemployed ⇑ Mental state ⇑ Quality of life for homeless people ⇓ Economic costs	Ia–Ib
Intensive case management	Dieterich et al. [44] Cochrane Review	Standard care 38 RCTs	⇓ Duration of inpatient care ⇑ Remaining in contact with services ⇔ Mental state ⇔ Mortality ⇑ Living independently	Ia
	Meta-analysis of NICE guideline schizophrenia [28]	Standard case management 13 RCTs	⇑ Remaining in contact with services ⇔ Mental state ⇔ Social functioning	Ia

⇓ Decreased, ⇑ increased, ⇔ no difference

Box 1 Recommendations concerning multidisciplinary team-based psychiatric community care

A	Multidisciplinary psychiatric community care teams should be established for the treatment of people with SMI in defined regions. *Grade A*, *Evidence level Ia*
A	Those teams should treat people with SMI in the community and, when required, also at home. *Grade A*, *Evidence level Ia*
A	People with SMI in acute episodes should have the opportunity to be treated at home by mobile crisis intervention teams. *Grade A*, *Evidence level Ia*
A	An assertive treatment approach should especially be available if treatment terminations are likely to occur. *Grade A*, *Evidence level Ia*
A	People with SMI should have the opportunity to be treated by assertive community treatment teams in their usual residential environment over longer time periods and for longer than the duration of the acute illness. *Grade A*, *Evidence level Ia*
A	In particular, homeless people with SMI should have access to assertive community treatment. *Grade A*, *Evidence level Ia*
GPP	In addition to the demand-oriented and flexible treatment, an essential task of multidisciplinary psychiatric community care teams should be a shared responsibility for provision of healthcare and psychosocial services, thereby guaranteeing continuity of care
GPP	The objective is treatment tailored to the individual needs of patients with the necessary intensity throughout the treatment process. In relation to the principle, "outpatient care has precedence over inpatient care," and hospital treatment should be avoided as far as possible

have been developed in different places around the world using a number of names: *crisis resolution teams*, *home treatment*, *crisis intervention teams or mobile crisis services*, for example. "A crises resolution team provides intensive support for people in mental health crises in their own home, and stays involved until the crisis is resolved. It is designed to provide prompt and effective home treatment, including medication, in order to prevent hospital admission and provide support to informal carers" [26, p. 27]. The multidisciplinary team is available to respond 24 h a day, 7 days a week. Crisis/home care reduced the number of people leaving the study early, reduces family burden and is a more satisfactory form of care for both patients and families [27]. Moreover, crisis/home management results in reduced hospital admission rates and duration of acute inpatient care compared with hospital-based treatment [28] (see Table 4).

Assertive community treatment teams provide a form of specialized mobile outreach treatment for people with more disabling mental disorders. ACT "is an intensive mental health program model in which a multidisciplinary team of professionals serves patients who do not readily use clinic-based services, but who are often at high risk for psychiatric hospitalization. Most ACT contacts occur in community settings. ACT teams have a holistic approach to services, helping with medications, housing, finances and everyday problems in living" [29, p. 141]. Other names are assertive outreach, mobile treatment teams or continuous treatment teams. In addition to multidisciplinary staffing and team approach, further key principles of ACT are integration of services, low patient–staff rations, rapid access, assertive outreach, individualized and time-unlimited services [29]. The most important evidence of psychiatric care systems available to the date of guideline development is summarized in Table 4. ACT can substantially reduce the costs of hospital care while improving outcome and patient satisfaction [30].

There are numerous studies that have assessed the effectiveness of ACT (see Table 4). Further reviews have focused on specific target groups, for example, homeless populations with SMI [31, 32] and people with comorbid severe mental and substance use disorders [33, 34]. In randomized trials, people receiving ACT showed a greater reduction in homelessness and a greater improvement in psychiatric symptom severity compared with those in standard case management treatment [31]. It could be that an integrated ACT reduces substance use and decreases number of hospitalizations and dropping outs of treatment [34]. However, newer studies showed less consistent findings. Burns et al. [35] looked into this question and concluded that intensive case management (ICM) works best with participants who tend to use a lot of hospital care at baseline. Similarly, it works less well with infrequent hospital users. When hospital use is high, ICM can reduce the use of hospital care. In addition, the team organization has an important influence: The effectiveness of ICM teams is increased as their organization reflects the assertive community treatment model.

Despite the problems caused by the high degree of fragmentation of healthcare and health support systems in Germany, there are already examples that illustrate that a specific multidisciplinary outreach work is also possible in Germany (e.g., [36, 37]). Recently, models of financing were created in order to overcome the fragmentation in German health care. Cross-sector integrated healthcare and regional psychiatry budgeting are two models of cross-sector health care for inpatient and outpatient care in Germany. The regional psychiatry budget is a specific solution for psychiatric services, whereas integrated healthcare models can be developed for all areas of health care [38]. Recommendations concerning multidisciplinary team-based psychiatric community care are formulated in Box 1.

Case management

Case management (CM) was initially introduced in the USA as a mechanism for coordinating fragmented systems

Box 2 Recommendations concerning case management

B Case management cannot be recommended for the routine care of every patient, but should be applied after checking specific preconditions (e.g., low density of community psychiatric services and/or high inpatient care utilization). *Grade B*, *Evidence level Ia*

of community care [39]. CM has been defined as "the coordination, integration, and allocation of individualized care within limited resources" [40, p. 125]. The case manager takes primary responsibility for the severely mentally ill person. "As a minimum this responsibility includes: keeping contact with the person, assessing their needs, and ensuring that these needs are met" [41, p. 106]. A variety of different models of CM have been developed over the past decades: the broker model, the clinical case management model, the ICM model, the strengths model and the rehabilitation model (see [42]). The ICM model was developed to meet the needs of high service users. The patient to staff ratio is low [41]. One important difference between ICM models and ACT and other multidisciplinary team-based approaches is that ICM programs do not subscribe to the team approach with shared caseloads and daily team meetings [29]. Today, CM for severely mentally ill people is implemented in most modern healthcare systems, often of an intensive nature [41]. Also in Germany, CM constitutes a grown form of social psychiatric practice and an essential element of community care. In Germany, the concept of practice-oriented case management has not yet been examined in clinical trials. An older Cochrane review determining the effects of several CM approaches compared against standard care showed that CM increased the numbers remaining in contact with services and approximately doubled the numbers admitted to psychiatric hospital [43]. ICM compared with standard care resulted in higher treatment satisfaction, reduced dropouts and shortened the duration of inpatient care [44] (see Table 4). Recommendations concerning CM are formulated in Box 2.

Vocational rehabilitation and participation in work life

People who suffer from SMI experience substantial levels of exclusion from work; they can experience educational dropout, high rates of unemployment and early retirement. Vocational rehabilitation services aim at helping mentally ill people to improve their occupational status. Traditionally, these services offer a period of preparation (prevocational training, PVT) before trying to place clients in competitive employment. A newer approach, known as supported employment (SE), tries to place clients in competitive jobs without any extended preparation. "SE has been defined as paid work that takes place in normal work settings with provision for ongoing support services" (see [45, p. 3]). A manualized variation of SE is the individual placement and support model (IPS). "The core principles of this model are (1) a focus on competitive employment, (2) eligibility based on consumer choice, (3) rapid job search, (4) integration of mental health and employment services, (5) attention to consumer preference in the job search, (6) individualized job supports and (7) personalized benefits counseling" (see [46, p. 281]). In Germany, traditional approaches of prevocational training are mainly used. Yet, there is a trend toward including elements of SE. The 2009 German Social Insurance Code (§38a SGB IX "Unterstützte Beschäftigung") further encouraged the implementation of this approach.

There is a broad evidence base with very robust results concerning work-related outcomes which demonstrate that SE is superior to PVT [28, 46–49]. Compared to PVT, SE has been shown to offer:

- A strong increase in employment rates on competitive job market (Ia),
- An increase in work hours per month (Ia),
- An increase in monthly income (Ib) and
- An increase in the number of weeks/year which are spent in competitive jobs (Ia–Ib).

There is no significant superiority of SE concerning non-work-related outcomes [50, 51]. SE's superiority for work-related outcomes may be less marked outside the USA [52]. A closer look at the EQOLISE study offers a similar assertion. The EQOLISE study was a randomized controlled trial comparing IPS to usual high-quality vocational rehabilitation and was conducted in six European centers, including in Ulm-Günzburg, Germany. In all six centers, IPS was more effective than vocational services for every vocational outcome (proportion of people entering competitive employment, the number of hours worked, the number of days employed and the job tenure of employed patients), but there was no significant difference in Ulm and in Groningen, Netherlands [51].

Nevertheless, not all SE participants obtain competitive employment and there are also clients who do not have vocational goals [46, 53]. SE programs may not be appropriate for all clients.

Compared to standard care (not work related), prevocational training is superior on several outcomes, especially in German-speaking countries. A German study showed that traditional vocational rehabilitation is effective with regard to employment status. Furthermore, it had positive effects on the level of functioning and the psychological well-being [54]. There is some evidence that financial

Box 3 Recommendations concerning vocational rehabilitation

B	For people with SMI who want to work in competitive labor markets, supported employment programs with a rapid job placement and on-site-support should be available and thus expanded. *Grade B*, *Evidence level Ia*
B	Prevocational training programs ("first train then place") should also be available, given that for a subgroup of people with SMI the primary labor market is not (yet) a realistic goal. Financial incentives increase the effectiveness such offers. Effectiveness is also increased when motivation-building interventions are offered and when interventions bring clients into competitive employment positions as quickly as possible. *Grade B*, *Evidence level Ib*
GPP	Vocational rehabilitation should put a stronger focus on avoiding job loss. Therefore, onset of a psychiatric illness requires early inclusion of adequate services
GPP	Completed education/professional training is essential for people with SMI. Adequate vocational training opportunities should be available close to patients' residential environments

Box 4 Recommendations concerning residential care interventions

A	Institutionalization should be avoided: adverse effects increase and quality of life decreases with level of institutionalization. *Grade A* (*upgrading*)
GPP	Potential for deinstitutionalization should be checked at regular intervals
0	There should be differentiated types of living/residential arrangements with a focus on participation and autonomy. The type of support should depend on individual needs. *Grade 0*, *Evidence level III*
GPP	Supported living facilities should be community based to improve social inclusion

incentives may result in greater effectiveness of traditional vocational rehabilitation [55]. In addition, traditional vocational rehabilitation programs, in combination with psychological intervention, can improve outcomes [56] (Box 3).

Residential care

Although the importance of stable and adequate housing for individuals with SMI is indisputable, there is little scientific research in this area. The number of studies is relatively small, and results are almost not comparable. A general finding of existing studies is that supported housing can reduce lengths of inpatient stays, especially if services are not time-limited [57]. There are also a few positive individual effects, for example, the reduction of negative symptoms and improvements of social contacts [57, 58]. Institutionalization is associated with negative effects [59–61]. Results do not indicate which patients benefit from which type of accommodation and living arrangement. Recommendations concerning residential care interventions are formulated in Box 4.

Single psychosocial interventions[2]

Psychoeducation

The term psychoeducation was first used by Anderson et al. [62] to describe a behavioral therapeutic concept consisting of four elements (informing the patient, problem-solving training, communication training and self-assertiveness training). Inclusion of relatives is another key component. A survey of complex family psychoeducation programs is found in McFarlane et al. [63]. Parallel to the development of psychoeducation in North American and the UK, psychoeducation in German-speaking countries has emerged as an independent therapeutic program and is defined as systematic, didactic-psychotherapeutic interventions that inform patients and their relatives about the illness and its treatment, facilitating both an understanding and personal responsibility for handling the illness and supporting those afflicted in coping with the disorder [64]. Group sessions last approximately 1 h, take place once to twice a week and consist of between four and 16 meetings. Group leaders are predominantly doctors or psychologists; co-leaders can be recruited from all relevant occupational groups [65]. This dual focus program was evaluated as part of the Munich Psychosis Information Project (PIP study). This randomized multicenter study showed a significant reduction in re-hospitalization rates and a reduction of intermittent days spent in hospital within this 2-year period [65]. Even 7 years after psychoeducational group therapy, significant effects on the long-term course of the illness can be found [66]. Our evidence search focused on psychoeducational interventions and family interventions with a psychoeducational approach. We have mainly found evidence for psychoeducation in schizophrenia and related disorders. These are set out in Table 5. We also identified a few single studies for psychoeducation for bipolar disorders. The results are almost uniform and show that psychoeducational intervention in schizophrenia reduces relapse and readmission

[2] A complete overview of identified evidence can be found in the full version of the guideline.

Table 5 Summary of evidence from systematic reviews and meta-analyses of psychoeducation

	Included works	RCTs	Outcomes	Evidence level
Psychoeducation	Pekkala and Merinder [120] Cochrane Review	10 RCTs	⇓ Relapse or readmission rates ⇔ Mental state	Ia–Ib
	Lincoln et al. [68]	18 RCTs	⇓ Relapse or readmission rates ⇑ Knowledge gain ⇔ Mental state ⇔ Social functioning ⇔ Compliance with medication	Ia
	Meta-analysis of NICE guideline schizophrenia [28]	21 RCTs	⇔ Relapse or readmission rates ⇔ Social functioning	Ia–Ib
Family interventions with psychoeducation	Pitschel-Walz et al. [67]	25 RCTs	⇓ Relapse or readmission rates	Ia
	Pilling et al. [121]	18 RCTs	⇑ Compliance with medication ⇓ Relapse or readmission rates ⇓ Burden experienced by the relatives ⇔ High-expressed emotion	Ia–Ib
	Pfammatter et al. [76]	31 RCTs	⇑ Mental state ⇓ Relapse or readmission rates ⇓ Duration of inpatient care ⇑ Social functioning ⇑ Knowledge gain, relatives ⇓ High-expressed emotion	Ia
	Pharoa et al. [122] Cochrane Review	43 RCTs	⇓ Relapse or readmission rates ⇑ Compliance with medication	Ia

⇓ Decreased, ⇑ increased, ⇔ no difference

Box 5 Recommendations concerning psychoeducation

GPP	Every person with SMI has the right to obtain adequate information about the illness, its causes, the course of the disease and various possibilities for treatment. The awareness of the patient is the basis for cooperative clinical decision making and is a prerequisite for health-improving behavior. People should obtain this information in their mother tongue
GPP	Psychoeducation can also be offered as part of trialogue forum and psychosis seminar
B	Structured psychoeducational programmes aimed at knowledge acquisition about the illness and reduction of relapses should be offered and integrated into a complex, long-term treatment program. The psychoeducation should be repeated as required. *Grade B*, *Evidence level Ia*
A	Psychoeducational programmes must incorporate the family. Dual focus, as well as single focus, approaches have been found to be effective. *Grade A*, *Evidence level Ia*
GPP	Empirical evidence for the effectiveness of psychoeducational interventions is based on studies of group settings. Psychoeducation is also possible in individual settings

rates and improves the participants' knowledge about the illness. It is obvious that there is a benefit from interventions including family members [67, 68]. Long-term interventions (longer than 3 months) appeared to be more successful than short-term interventions [67]. Psychoeducation for patients with bipolar disorders can lead to a higher time to relapse and a significantly lower mean number of relapses (total, manic and depressive relapses); re-hospitalization rates were also reduced (e.g., [69–72]).

Recommendations concerning psychoeducation are given in Box 5. Regarding the treatment recommendations for depressive disorders, reference is made to the S3-Leitlinie/Nationale Versorgungsleitlinie Unipolare Depression [73]. The authors recommend psychoeducational interventions in depression as an additional intervention in an individualized treatment plan (*Grade B*).

Social skills training

SMI is often affected by impairments in daily skills and social functions, and thus, participation in society is markedly lowered. A social skills training is an important approach in psychiatric rehabilitation. Several training models have been designed and evaluated [74]. Social skills training utilizes behavior therapy principles and techniques for teaching patients to enable them "to

Box 6 Recommendations concerning social skills training

GPP	As severe mental illness is often accompanied by impairments in daily skills and social functions, and thus, participation in society is markedly impaired, interventions to improve social skills (self-care, family, leisure activities, work, social participation) are an important element in treatment
A	If social impairments are present, training of social skills should be offered to improve social competence. *Grade A*, *Evidence level Ia*
GPP	The social skills training should be adjusted to the individual needs of the client and integrated into a complex, long-term treatment program

Table 6 Summary of evidence from systematic reviews and meta-analyses of arts therapies

Form of therapy	Included works	Control group	Outcomes	Evidence level
Music therapy	Gold et al. [87] Cochrane Review	Standard care alone 4 RCTs ($N = 266$)	⇑ Global state (1 RCT) ⇑ General mental state (1 RCT) ⇓ Negative symptoms (3 RCTs) ⇑ Social functioning (1 RCT)	Ia–Ib
	Maratos et al. [89] Cochrane Review	Standard care alone Extraction of one relevant study ($N = 60$)	⇓ Depressive symptoms	Ib
Art therapy	Ruddy and Milnes [86] Cochrane Review	Standard care alone 2 RCTs ($N = 137$)	⇓ Leaving the study early (1 RCT) ⇓ Negative symptoms (1 RCT) ⇔ Social functioning (1 RCT) ⇔ Quality of life (1 RCT)	Ib
Drama therapy	Ruddy and Dent-Brown [123] Cochrane Review	Standard inpatient care alone 5 RCTs ($N = 210$)	⇑ Self-esteem (1 RCT) ⇓ Feelings of inferiority (1 RCT)	Ib
Dance and movement therapy	Xia and Grant [88] Cochrane Review	Supportive counseling and routine care 1 RCT ($N = 45$)	⇓ Negative symptoms ⇔ Satisfaction with care ⇔ Quality of life	Ib
Arts therapies (art therapy, music therapy, dance therapy)	Meta-analysis of NICE guideline schizophrenia [28]	Standard care alone 6 RCTs ($N = 382$)	⇑ Global state (1 RCT) ⇓ Negative symptoms (5 RCT) ⇑ Social functioning (1 RCT) ⇔ Quality of life (1 RCT)	Ia–Ib

⇓ Decreased, ⇑ increased, ⇔ no difference

acquire interpersonal disease management and independent living skills for improved functioning in their communities" [75]. We have identified five meta-analyses and many RCTs demonstrating the efficacy and effectiveness of social skills training. Results suggest that patients may benefit from trainings that improve social skills and social functioning [76–78]. In addition, there is empirical evidence that when cognitive rehabilitation approaches are added, social skills training can improve neuro-cognitive and social-cognitive functioning. The training of specific cognitive functions is known as integrated psychological therapy (IPT) [78, 79]. Other specific strategies have also been proven effective [80–83]. There are ambiguous results regarding other outcomes. Beyond this, techniques are required which actively support the generalization of positive achievements to patients' natural environments [84, 85] (Box 6).

Arts therapies

Arts therapies are widely used treatment strategies for people with SMI. There are various approaches and a variety of different techniques, but they all focus on non-verbal communication and on the creation of a working therapeutic relationship in which strong emotions can be expressed and processed. A systematic search was carried out for art therapy, music therapy, drama therapy and dance movement therapy. Generally, only a few randomized trials are available; however, the studies show that arts therapies in addition to standard care reduce the amount of negative symptoms among people with schizophrenia [86–88] (see Table 6). The most significant evidence is available for music therapy. In the treatment of severe depression, it has been shown that the addition of music therapy improves depression [89]. Recommendations concerning arts therapies are formulated in Box 7.

Box 7 Recommendations concerning arts therapies

B	Arts therapies should be offered according to the individual needs of the patient and integrated into a complex, long-term treatment program aimed at an improving of negative symptoms. *Grade B*, *Evidence level Ib*

Box 8 Recommendations concerning occupational therapy

B	Occupational therapy should be offered according to the individual needs of the patient and integrated into a complex, long-term treatment program. *Grade B*, *Evidence level Ib*

Box 9 Recommendations concerning movement therapy and sports

B	In treating schizophrenia, movement-oriented interventions should be used and adjusted to the condition, individual needs and physical fitness of the patient and integrated into a multi-modal complex treatment program. *Grade B*, *Evidence level Ib*
B	In treating schizophrenia, body-oriented psychotherapy should be used. *Grade B*, *Evidence level IIa*
B	In treating depression, regular exercise should be applied, adjusted to the physical fitness of the patient. *Grade B*, *Evidence level Ib*
0	Patients should be encouraged and instructed to establish and independently maintain regular participation in sports in their everyday life. *Grade 0*, *Evidence level III*
GPP	Regular and guided physical activity should be offered to improve psychological symptoms and physical fitness, to stimulate body awareness, and to encourage integration in social community. *GPP*

Occupational therapy

Occupational therapy is one of the oldest forms of treatment of mental disorders. There is a Greek term ("ergon") that means recovery through action and work. Occupational therapy aims to support the patient in improving his ability to act independently, thereby increasing self-dependence in everyday life (self-care, leisure and productivity). Occupational therapy covers a wide range of treatment methods. There are three fundamental methodological orientations suggesting the selection of specific therapeutic approaches and techniques: (1) competence-centered method, (2) expression-centered method and (3) interactional method [90]. Generally, the effectiveness of occupational therapy as a mental health intervention has not been systematically evaluated. Only a few randomized trials are available, sample sizes are small, and outcomes are varied. Isolated positive results were obtained from single studies (e.g., [91–93]) (Box 8).

Exercise therapy

The use of body- and movement-related measures for the prevention and healing of illnesses has a long tradition. Apart from the various physical benefits, psychological changes have been postulated [94]. Today, movement therapy and sports are part of the routine care in Germany for individuals with SMI. In psychiatry, it is possible to distinguish between three basic approaches: (1) sport therapy approach or exercise (e.g., endurance training), (2) body-oriented psychotherapy (e.g., integrated movement therapy) and (3) educational-psychosocial approach (e.g., cooperative games). We have identified one systematic meta-analysis and some single studies assessing the effectiveness of movement therapy and sports in schizophrenia and depression. The majority of identified studies examined the effectiveness of aerobic endurance training. This form of exercise can improve mental and physical health for patients with schizophrenia [95, 96]. When comparing aerobic endurance with yoga, yoga was found to have better outcomes for mental state and quality of life [95]. Single studies on exercise in schizophrenia also show positive effects on social functioning, emotionality and motor and psychomotor skills [97–100]. Body-oriented psychotherapy for patients with schizophrenia leads to increased mental state, motility and general functioning [101, 102]. For patients suffering from severe depression, results showed that aerobic endurance training positively affect the severity of depression and anxiety, quality of life, self-esteem, dysfunctional attitudes and physical health [103–108]. Motivating the patient to participate in sports in the long term has also been shown to be effective [104]. Recommendations concerning movement therapy and sports are given in Box 9.

Discussion

The German guideline on psychosocial therapies in patients with SMI is based on a comprehensive appraisal of evidence on the effectiveness of psychosocial interventions in the target group. It offers an opportunity for further improving health care for patients with SMI in Germany [109]. The guideline can be used to compare the current psychiatric healthcare situation with the guideline recommendations in order to identify and draw conclusions based on the strengths and the weaknesses of the care models in different settings. Similarly, future changes in evidence-based psychiatric health care in Germany may be guided or supported by the guideline. Moreover, the guideline also

highlights existing gaps and areas for further mental health service research.

It remains, however, a challenge to develop recommendations on evidence-based practices for SMI. Evidence-based practice should be grounded in consistent research evidence that meets criteria of internal and external validity [110] as well as having been subjected to quality assessment [111].

Research evidence on psychosocial interventions is often context specific. As a consequence, it is not always consistent, and new evidence evolves which generates a need for ongoing scientific review and reconsideration of recommendations. Study results may depend on the society and its values, the country, the healthcare system and other variables. Thus, in the development of the presented guideline, study evidence was only one factor influencing recommendations. It was central, but subject to the appraisal of the consensus group with regard to relevance, transferability and cost-effectiveness in the German mental health system. This appraisal used consensus methods. Its legitimacy is strengthened by the fact that representatives of all relevant stakeholders were members of the consensus group and that the evidence search and assessment of methodological quality were performed by an independent GDG.

Individual systematic reviews demonstrated that there is good evidence for the effectiveness of most of the selected psychosocial interventions in SMI. The best available evidence exists for multidisciplinary team-based psychiatric community care (Ia–Ib). The majority of published studies on approaches such as home treatment, assertive community treatment and CMHT have been conducted in the USA or the UK. However, community-based and team-based psychiatric care is also practiced in Germany. There is also a broad evidence base on work-related outcomes which demonstrate that SE is superior to prevocational training (Ia–Ib). This research was supplemented by a randomized controlled multicenter trial in Europe comparing IPS to usual high-quality vocational rehabilitation. In all six centers, IPS was more effective than were vocational services for every vocational outcome. However, within-center comparisons resulted in no significant difference in Groningen, the Netherlands and Ulm, Germany. Unfortunately, once a guideline is published, it is already outdated. In the meantime, a recent study from Switzerland has been published which favors SE over traditional vocational rehabilitation programmes even in a Western European country with a very high threshold to the open labor market for people with SMI [112]. Thus, it is probable that the SE will be recommended with a higher level of recommendation in the next edition of the guideline. Unfortunately, there is only scarce evidence for residential care interventions. There is a need for well-designed and reported RCTs of the effects of residential care interventions for people with SMI.

With regard to single interventions, there is considerable evidence for the efficacy of psychoeducation and social skills training. Convincing effects can be found mainly for family interventions with a psychoeducational approach. The social skills training, which has been examined primarily in people with schizophrenia, clearly shows positive effects on social skills and social functioning. The transfer of the gains in social skills to the daily life, i.e., social adjustment and role fulfillment of patients in their living environments, is of central importance. For other interventions, the available evidence is either scarce or characterized by methodological limitations that do not allow a strong recommendation. For example, for arts therapies, only a few randomized trials are available and sample sizes are small. In addition, short observation periods and heterogeneous interventions restrict statements about efficacy. Therefore, a reliable statement about the effectiveness of arts therapies in SMI is premature, and conflicting results have been reported. A recent study confirmed the positive effects of music therapy as an addition to standard care for people with schizophrenia [113]. However, group art therapy for people with established schizophrenia (MATISSE study) did not significantly improve global functioning, mental health or other health-related outcomes [114]. Here again, a revision of recommendations will take this finding into account. The effectiveness of occupational therapy as a mental health intervention has not been systematically evaluated; thus, only isolated positive results could be obtained from single studies of occupational therapy. Therefore, occupational therapy was labeled with a recommendation strength B in the guideline. There is no clear demarcation between occupational therapy, vocational rehabilitation and living skills training. Often vocational rehabilitation and living skills training are components of occupational therapy. The evidence for vocational rehabilitation and living skills training is very strong. We assume that increasingly establishing occupational therapy in academic institutions will offer opportunity for research in this area. On the whole, it can be stated that the low number of high-quality studies in some areas of psychosocial health services research results from the fact that implementation of such studies (unlike pharmaceutical research) is difficult although public support is available. Despite careful research, publication bias cannot be excluded.

The new edition of the guideline will not just include recent study results, but will also consider further interventions, e.g., cognitive remediation, compliance therapy and behavioral interventions addressing healthy lifestyles of patients including smoking, diet and exercise. It will also be discussed whether relaxation techniques (that are not genuine psychosocial interventions) should find their way into the next version of the guideline. Corresponding published scientific literature is available (e.g., [115–118]).

Today, the requirements for high-quality clinical practice guidelines are defined internationally in a uniform way.

In German-speaking countries, they are summarized in the Guideline Appraisal Instrument DELBI which is the result of a collaboration between AWMF, German Agency for Quality in Medicine (ÄZQ) and partners in care practice, science and health (available under: http://www.delbi.de). The three key aspects of DELBI are (1) the representativeness of the GDG, (2) the evidence base and (3) the structured consensus process. However, acceptance and effects of a guideline do not depend solely on its methodological quality but also on adequate implementation strategies [119]. Implementation is a process requiring multifaceted strategies to promote changes [119].

The guideline is available as long version in book format (ISBN: 978-3-642-30269-5). The long version and a report of methodology are also freely accessible to all via the Internet (see: http://www.dgppn.de/dgppn/struktur/referate/versorgung0/s3-leitlinie-psychosoziale-therapien-bei-schweren-psychischen-erkrankungen.html). In addition, numerous publications in relevant German language specialist journals are generated. Part of our implementation strategy is a patient version of the guideline (ISBN: 978-3-642-55267-0) and an ultra-short version for waiting rooms in outpatient settings in different languages to cross-language barriers. The patient versions will be published in cooperation with the Bundesverband der Angehörigen psychisch Kranker e.V./Familien-Selbsthilfe Psychiatrie and with the Bundesverband Psychiatrie-Erfahrener e.V. A web-based dissemination support system (see: http://www.dgppn.de/dgppn/struktur/referate/versorgung0/s3-leitlinie-psychosoziale-therapien-bei-schweren-psychischen-erkrankungen.html) is available.

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