

Treatment Goals in Schizophrenia: Subgroup Analysis of a Survey in Matched Physician-Patient Pairs

Gerhard Gründer^{1,2}, Philipp Bauknecht³, Stefanie Schell⁴, Karolina Leopold^{5,6}, Michael Paulzen⁷⁻⁹, Stefan Leucht^{10,11}

¹Department of Molecular Neuroimaging, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Mannheim, Germany; ²German Center for Mental Health, Partner Site Mannheim/Heidelberg/Ulm, Mannheim, Germany; ³Dr. Carl GmbH, Stuttgart, Germany; ⁴Klinikum Blankenburg, Harzklinikum Dorothea Christiane Erxleben, Academic teaching hospital of Otto von Guericke University Magdeburg, Blankenburg, Germany; ⁵Department of Psychiatry and Psychotherapy, Vivantes Klinikum Am Urban, Berlin, Germany; ⁶Department of Psychiatry and Psychotherapy, Carl Gustav Carus University Hospital, Technische Universität Dresden, Dresden, Germany; ⁷Alexianer Center for Mental Health, Aachen, Germany; ⁸Department of Psychiatry, Psychotherapy and Psychosomatics, RWTH Aachen University, Aachen, Germany; ⁹JARA - Translational Brain Medicine, RWTH Aachen University, Aachen, Germany; ¹⁰Department of Psychiatry and Psychotherapy, TUM School of Medicine and Health, Technische Universität München, Munich, Germany; ¹¹German Center for Mental Health, Partner Site Munich/Augsburg, Munich, Germany

Correspondence: Gerhard Gründer, Department of Molecular Neuroimaging, Central Institute of Mental Health, Medical Faculty Mannheim, University of Heidelberg, Abteilung Molekulares Neuroimaging, Zentralinstitut für Seelische Gesundheit (ZI), J 5, Mannheim, 68159, Germany, Tel +49 621 1703-1900, Fax +49 621 1703-80-1900, Email gerhard.gruender@zi-mannheim.de

Background: Schizophrenia is a complex disease that affects many aspects of the lives of people living with the disease. Therefore, many different treatment goals are possible. Treatment goals in schizophrenia may differ between patients and physicians. Here, we set out to explore whether there are subgroups in which differences between patient goals and treating psychiatrist's goals are especially marked, which would highlight the need for better dialogue between psychiatrists and patients belonging to these subgroups.

Methods: In a survey, patients with schizophrenia and their treating psychiatrists were asked about treatment goals. To this end, questionnaires were sent to psychiatrists all over Germany. Psychiatrists were asked to rank and rate a prespecified set of treatment goals for up to 3 specific patients. Furthermore, these same patients were asked to rank and rate the goals for themselves. Responses are analyzed in subgroups of patients stratified by sex, disease duration (≤ 5 years/ > 5 years) and treatment by psychiatrists in private practice vs hospital-based psychiatrists.

Results: We obtained answers from 28 physicians, 17 of which worked exclusively in private practice, and 80 patients. Of the patients, 13 had a disease duration ≤ 5 years, 31 were female, and 52 were treated by psychiatrists in private practice. Concordance between patients and their physicians was fairly high, and none of the subgroups (shorter/longer disease duration, male/female sex, treatment by psychiatrists in private practice vs hospital-based psychiatrists) stood out as markedly different from the total cohort. The most marked differences between patients and physicians regarded avoidance of different possible medication side effects.

Conclusion: We did not find any major differences between the subgroups in this study. Overall, there was a high concordance of rankings and ratings of treatment goals. Patients tended to focus on different side effects than physicians, indicating that these should be discussed thoroughly when making a treatment decision.

Keywords: schizophrenia, treatment goals, patient-centered, survey

Introduction

Schizophrenia is a complex disease that affects many aspects of the lives of people living with the disease. Symptoms can be manyfold and complex, and psychosocial functioning, cognition, and quality of life (QoL) are often impaired. Many patients with schizophrenia have problems finding or maintaining work or starting/continuing education. Therefore, the treatment of schizophrenia may have many different goals. For patients with schizophrenia, goal setting is associated with improvements in motivation and role functioning.¹

Treatment goals for patients with schizophrenia have evolved over time.² Especially before the advent of antipsychotics, goals were to mitigate agitation and harm to self and others. When antipsychotics became available, positive symptoms became the focus of treatment. Later on, second-generation antipsychotics were developed, making it possible to treat negative symptoms and avoid some common side-effects of the first-generation antipsychotics. Modern treatment also encompasses goals in the realms of psychosocial functioning and quality of life and aims to achieve recovery.²

Goals may be perceived differently by patients and physicians. Patients tend to think about their lives more holistically than physicians do and factor their social and clinical needs in with similar weight.³ Hence, there may be a difference in how patients on the one side and physicians on the other side perceive the relative importance of the different treatment goals.⁴⁻⁷

We set out to find out if patients' treatment goals are concordant with those of their treating psychiatrists and identified relevant goals from the literature.⁸

The main results of our study have already been reported.⁹ Briefly, we found that in matched pairs of 80 patients and 28 physicians, goals within the categories effectiveness and quality of life were considered more important than goals related to tolerability. In general, there was high agreement between patients and their physicians on goal priorities. Differences between both groups mostly addressed avoidance of side effects, a fact that was in some cases more important to patients than to physicians. Additionally, physicians tended to emphasize the prevention of relapses and hospitalizations more than patients, while patients prioritized goals related to daily life and coping with the illness.

These findings led us to the question whether there are subgroups of patients who have greater problems aligning their goals with their psychiatrists, or subgroups that are especially prone to misjudgment pertaining to their goals by the treating psychiatrists. Previously, Bridges and colleagues studied a cohort of 100 patients with schizophrenia.¹⁰ In this study, no significant differences were found between patients with recent onset of psychosis and patients with longer disease duration.¹⁰ Similarly, Zipursky et al found that age or duration of treatment did not predict goal preferences in a sample of 300 patients with psychotic disorders.¹¹

We now report findings on subgroup analyses of our survey. We therefore divided the participating patients into subgroups regarding disease duration (≤ 5 years vs > 5 years), age (≤ 35 years vs > 35 years), sex, and regarding the way of treatment circumstances (patients treated by psychiatrists in private practice vs psychiatrists in hospitals or in a so called *Psychiatrische Institutsambulanz*, PIA, psychiatric hospital outpatient department, a more intensive form of outpatient treatment in Germany). Our goal was to explore whether there are subgroups in which differences between patient goals and treating psychiatrist's goals are especially marked, which would highlight the need for better dialogue between psychiatrists and patients belonging to these subgroups.

Materials and Methods

We identified treatment goals for patients with schizophrenia from the literature, selected 31 treatment goals as the most relevant, and classified them into three categories (Box 1). Via a Delphi process, we verified a consensus about their

Box 1 Treatment Goals Considered in This Study

Category: Effectiveness/Symptom Reduction
Reduction of perceptual distortions (hallucinations)
Reduction of delusions (fear of persecution, observation, manipulation, being influenced)
Decrease in irritability/hostility/aggressiveness
No self-endangerment
Clear thinking
Good concentration/learning capacity/attention
More motivation/more drive/more energy/less exhaustion

(Continued)

Box 1 (Continued).

Category: Effectiveness/Symptom Reduction
Mood improvement
Reduction of anxiety/uncertainty
Being able to feel emotions
Being able to enjoy
Reduction in relapses/hospitalizations/medical interventions
Category: tolerability
No weight gain or the least amount of weight gain possible
No or the lowest possible level of restlessness/agitation
No or the least amount of fatigue/slowing down possible
Not feeling subdued
No metabolic disturbances or the lowest level possible (eg, hyperglycemia)
No hormonal disturbances or the lowest level possible (eg, prolactin elevation)
No sexual dysfunction or the least amount of sexual dysfunction possible
No or the lowest possible degree of cardiac dysfunction/other organ dysfunction
Category: quality of life/functioning/participation
Improving work-related skills and competencies (school/study/job)
Ability to establish and maintain close relationships (family, children, friends, intimate relationships)
Regaining and maintaining abilities to manage activities of daily life (housing, finances)
Self-care skills (nutrition, hygiene, clothing, physical health)
Maintenance of self-determination/autonomy
Satisfaction with the current life situation
Self-confidence/assertiveness/standing up for convictions
Reduction of self-stigmatization (thinking oneself less valuable because of the disease)
Being able to pursue a hobby/leisure activities
Disease control without medication
Make sufficient use of health care services for concomitant somatic and psychiatric diseases

relevance among a random sample of psychiatrists. For more information on the Delphi process, see our previous publication.⁹ Based on the Delphi process, questionnaires about the treatment goals were developed and sent out to psychiatrists by a clinical research organization. Psychiatrists were asked to invite three patients with the diagnosis of schizophrenia (according to ICD-10) to participate and fill in the questionnaires regarding their individual treatment goals. Furthermore, the psychiatrists were asked to fill in a questionnaire about their particular goals for each participating patient. Within the questionnaire, participants were asked to rank and rate the treatment goals.

Ranking

In the ranking part of the questionnaire, participants were asked to identify the most important treatment goal for each of the three categories effectiveness/symptom reduction, tolerability, and quality of life/functioning/participation (Box 1). If

more than one goal was marked as most important, the data was excluded from the analysis. McNemar tests were used to determine whether percentages of patients and psychiatrists stating a certain goal to be the most important one were significantly different; those goals that displayed significant differences are reported here.

Rating

In the rating part of the questionnaire, participants were asked to assign each goal one of four possible values: “most important” (one goal only), “also important”, “less important” or “hardly important”. This was transformed into numerical values, with “most important” = 1 to “hardly important” = 4. Mean values are depicted in spider charts, with more important goals on the periphery, and less important goals in the center. We did not run statistical tests on these data, but rather discuss those that show the largest amount of spread between patients and physicians in the spider charts.

Subgroup Analysis

Subgroup analyses were pre-specified, but exploratory in nature. Statistical tests were two-sided with $\alpha = 0.05$. Testing was done on differences regarding the goals marked as “most important” between physicians and patients within one subgroup. No testing was done between subgroups. There was no alpha adjustment for multiple testing.

Results

Participant Demographics and Characteristics

Characteristics of the physicians who took part in the survey are shown in [Table 1](#). Patients’ characteristics are shown in [Table 2](#).

Table 1 Characteristics of Participating Physicians

	Physicians (n = 28, if Not Indicated Otherwise)
Age, years, mean (SD)	53.5 (8.3)
Sex, female, n (%) / male, n (%)	15 (53.6) / 13 (46.4)
Specialty, n (%)	
Psychiatry	18 (64.3)
Psychiatry and Geriatrics	1 (3.6)
Psychiatry and Neurology	8 (28.6)
Neurology	1 (3.6)
Clinical experience, years (SD)	24.8 (8.9)
Experience in psychiatry, years (SD) (n = 27)	20.7 (8.2)
Current place of occupation, n (%)	
Clinic / Clinic and PIA	3 (10.7) / 4 (14.3)
Psychiatrische Institutsambulanz (PIA, psychiatric hospital outpatient department) / PIA and Private Practice	3 (10.7) / 1 (3.6)
Private Practice	17 (60.7)
Experience treating patients with schizophrenia, years (SD)	21.8 (7.3)
Frequency of contact with patients with schizophrenia, n (%)	
Daily	12 (43)

(Continued)

Table 1 (Continued).

	Physicians (n = 28, if Not Indicated Otherwise)
Several times per week	13 (46)
Several times per month	3 (11)

Table 2 Characteristics of Participating Patients

	Patients (n = 80, if Not Indicated Otherwise)
Age, years, mean (SD) (n = 79)	44.7 (12.9)
≤ 35 years, n (%)	24
> 35 years, n (%)	55
Sex, female, n (%) / male, n (%) (n = 79)	31 (39.2) / 48 (60.8)
Age at diagnosis, years (SD) (n = 77)	27.5 (8.9)
Duration of schizophrenia, years (SD) (n = 77)	17.2 (10.6)
≤ 5 years, n (%)	13 (16.88)
> 5 years, n (%)	64 (83.12)
Medical treatment (n = 77)	76 (98.7)
Current drug treatment, n (%) (n = 75)	
Long-acting injectable	15 (20.0)
Oral	47 (62.7)
Long-acting injectable and oral	13 (17.3)
Current treatment mode, n (%) (n = 79)	
Outpatient	63 (79.8)
Inpatient	16 (20.3)
Treated by psychiatrist in private practice	52 (65.82)
Treated by psychiatrist in hospital or PIA	27 (34.18)
Current disease severity*, n (%) (n = 77)	
Mildly ill	11 (14.3)
Moderately ill	24 (31.2)
Markedly ill	32 (41.6)
Severely ill	10 (13.0)
Patients who required help filling in patient sheet, n (%)	
Yes	59 (75.6)
No	19 (24.4)

Note: *According to Clinical Global Impression – Severity score, CGI-S.

Abbreviation: SD, standard deviation.

Subgroups Disease Duration (≤5 Years/>5 Years)

Ranking

The goals that were mentioned as “most important” by the largest proportion of participants in each of the subgroups are shown in [Figure 1](#) and [Supplementary Table 1](#).

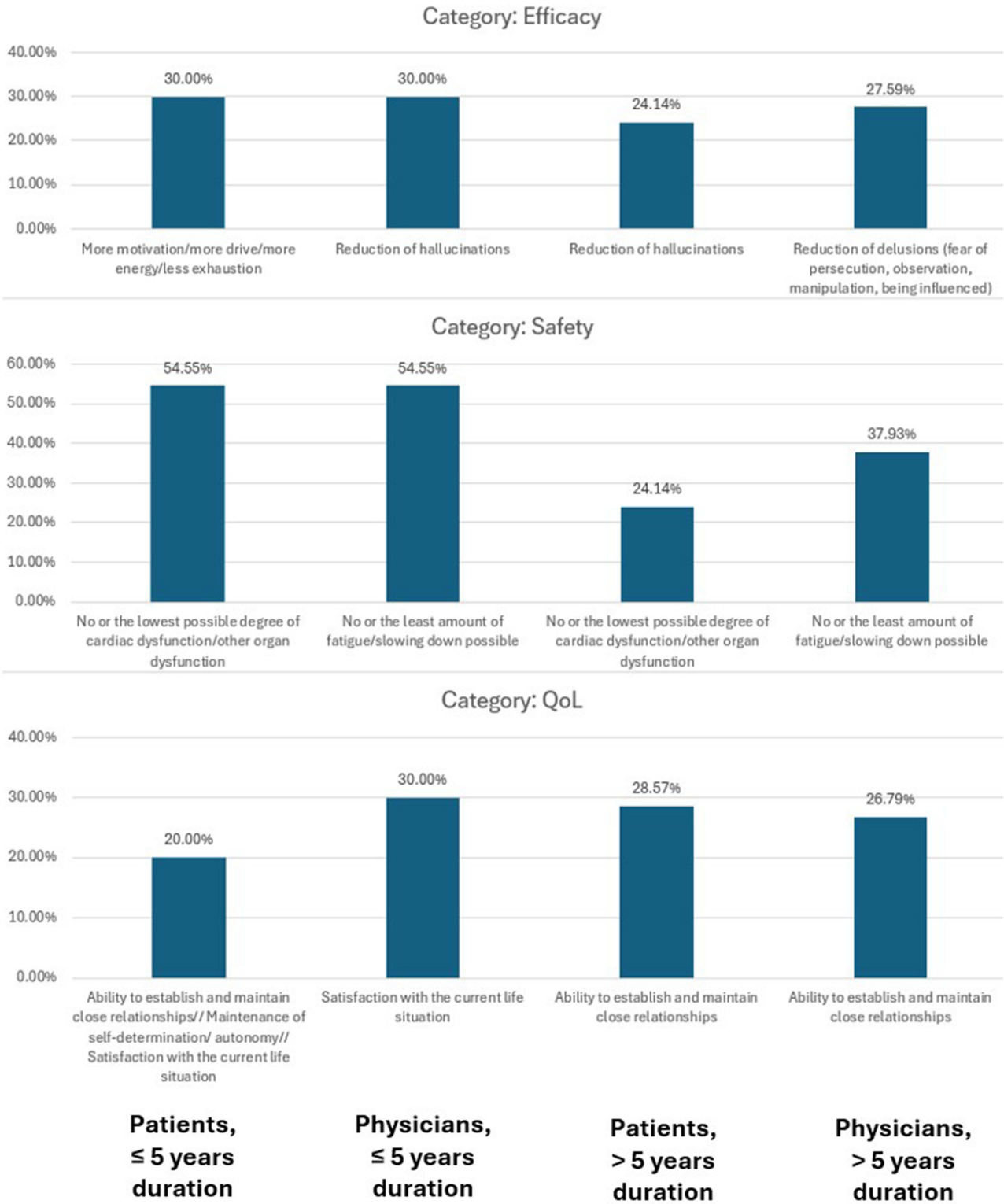


Figure 1 Goals that were mentioned as “most important” by the largest proportion of respondents in each of the subgroups defined by disease duration ≤ 5 years/> 5 years.

For both patients with shorter and longer disease duration, significantly more physicians ranked the avoidance of fatigue a top priority compared to their patients.

The priority of avoidance of cardiac or other organ dysfunction was only significantly different between patients with longer disease duration and their physicians, with more patients ranking this as their most important safety goal. In patients with shorter illness duration, 55% of the patients, but only 9% of the physicians stated this goal ($p = 0.059$).

Rating

In the rating of effectiveness goals, “improving the mood” seemed less important to physicians with regard to patients with shorter disease duration than for patients with longer disease duration (Figure 2). “Being able to enjoy” was more important to patients with both short and long disease duration.

Regarding tolerability, the preferences of patients with shorter and longer disease duration as well as their physicians reflected the preferences of the whole cohort, with marked differences in “No fatigue”, “No cardiac/other organ dysfunction” and “No metabolic disturbances” (Figure 3).

Being able to pursue a hobby stood out as especially important to patients with shorter disease duration (Figure 4). Physicians emphasized “improving work-related skills” for patients with shorter disease duration. Patients with both longer and shorter disease duration emphasized “disease control without medication” and “make sufficient use of health care services” more than their physicians.

We also analyzed subgroups of patient age (≤ 35 years/ >35 years), assuming that younger patients tended to have shorter and older patients to have longer disease duration. In ranking, “Avoiding fatigue/slowing down” was ranked as top by more psychiatrists than patients for both patient groups. Metabolic disturbances were significantly more often a concern older patients compared to their physicians, while the difference between younger patients and their physicians

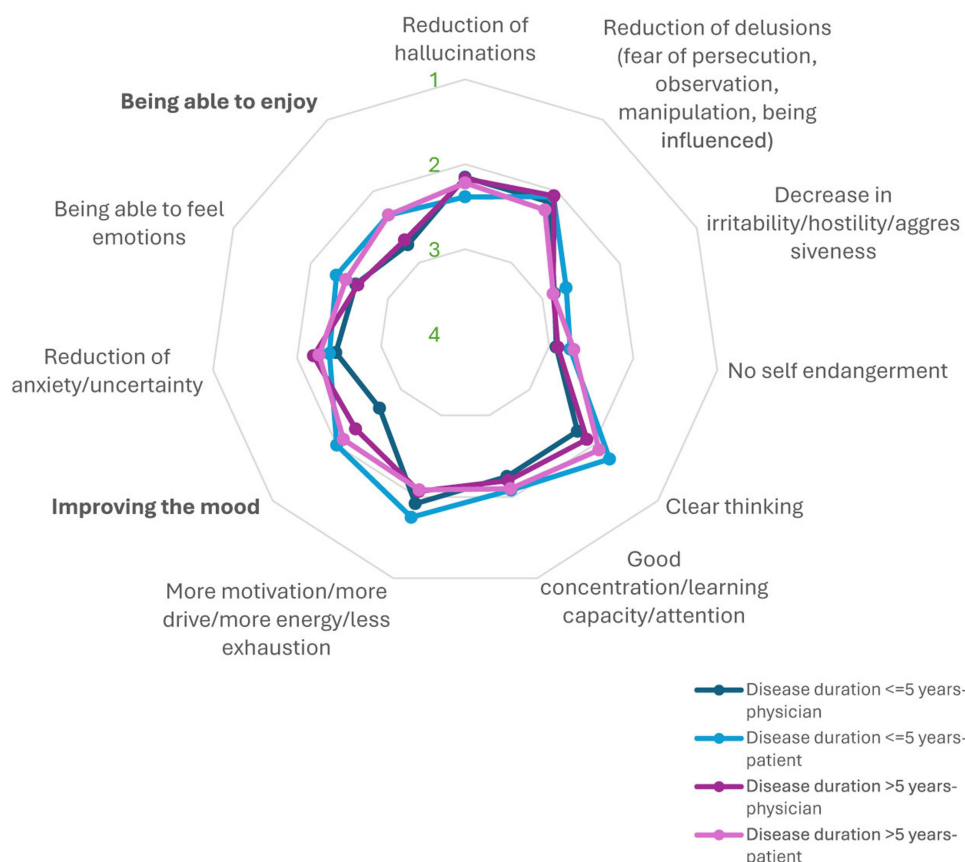


Figure 2 Mean ratings of goals from the category “effectiveness/symptom reduction” by patient subgroups with disease duration ≤ 5 years or > 5 years and their physicians. Data points at the periphery denote higher importance, data points at the center denote lower importance (1 = “most important”; 4 = “hardly important”). Goals that are discussed in the text are printed in bold.

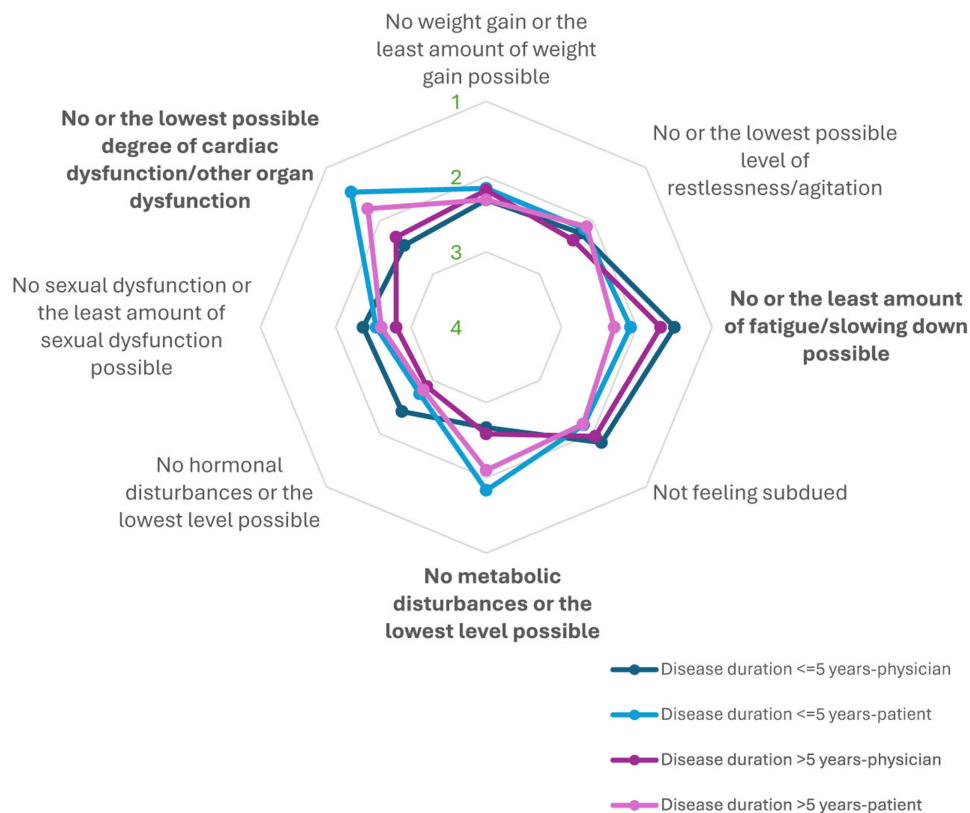


Figure 3 Mean ratings of goals from the category “tolerability” by patient subgroups with disease duration ≤ 5 years or > 5 years and their physicians. Data points at the periphery denote higher importance, data points at the center denote lower importance (1 = “most important”; 4 = “hardly important”). Goals that are discussed in the text are printed in bold.

was not significant. More patients ranked “No or the lowest possible degree of cardiac dysfunction/other organ dysfunction” as their top priority compared to their physicians in both subgroups.

In ratings of effectiveness goals, the largest spread was seen in “Being able to enjoy”, which was more important to patients. The rating results for tolerability goals were very similar to the total cohort, with patients of both age groups emphasizing “No cardiac/other organ dysfunction” and “No metabolic disturbances”, while physicians focused on “No fatigue”. In case of the quality of life goals, the largest differences were seen for “Disease control without medication” and “Make sufficient use of health care services”, with both issues being more important to both younger and older patients and not to physicians.

Subgroups Male/Female

Ranking

Goals that were ranked as “most important” by the largest proportion of participants are shown in [Supplementary Table 1](#).

Both male and female patients considered clear thinking more often as their top treatment goal than treating psychiatrists did. Similar results were found for “No or the lowest possible degree of cardiac dysfunction/other organ dysfunction”. Significantly more psychiatrists than patients considered “No or the least amount of fatigue/slowing down possible” as the top treatment goal, for both male and female patients.

For “Improving work-related skills and competencies”, the difference between physician and patient ranking was only significantly different for male patients vs their treating psychiatrists, but not for female patients. 20.0% of treating physicians considered this a top priority goal for their male patients, but only 5.0% of the patients. 18.5% of the female patients and 11.1% of their treating psychiatrists considered this a top priority.

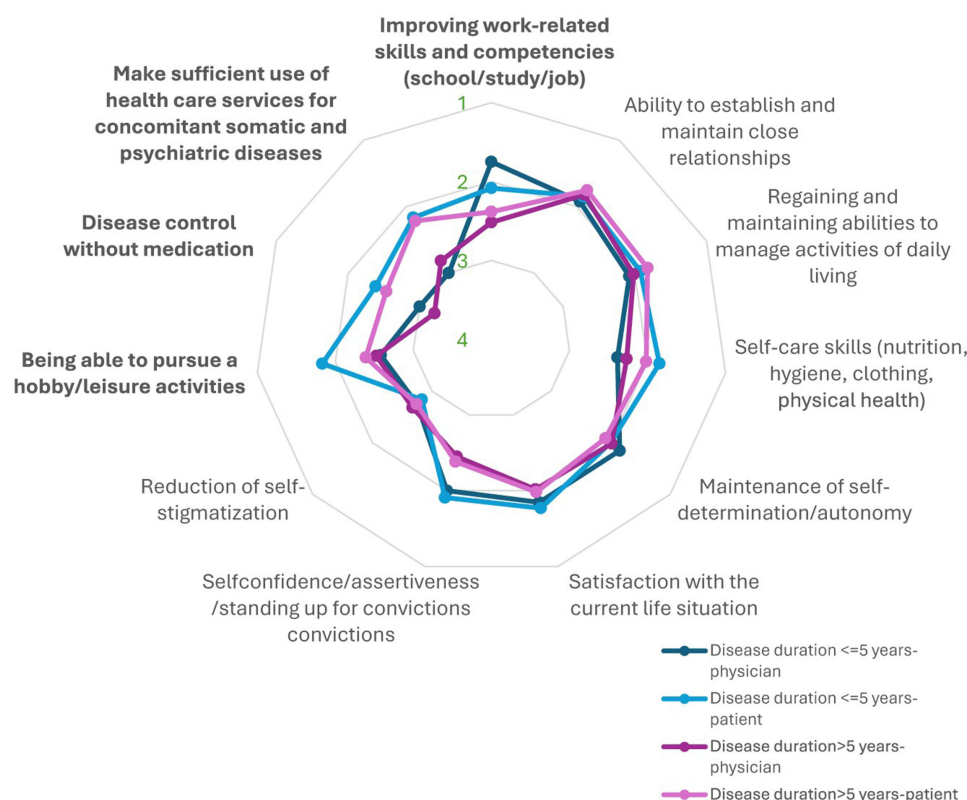


Figure 4 Mean ratings of goals from the category “quality of life/functioning/participation” by patient subgroups with disease duration ≤ 5 years or > 5 years and their physicians. Data points at the periphery denote higher importance, data points at the center denote lower importance (1 = “most important”; 4 = “hardly important”). Goals that are discussed in the text are printed in bold.

Rating

In the category effectiveness, the broadest distribution of ratings was seen in “being able to enjoy” and “clear thinking”, both of which appeared more important to patients (both female and male, [Supplementary Figure S1](#)).

“No or the lowest possible degree of cardiac dysfunction/other organ dysfunction” and “No metabolic disturbances” were more important to both male and female patients, as seen in the total cohort, while “No fatigue” was more important to physicians ([Supplementary Figure S2](#)). Interestingly, avoiding weight gain seemed to be more important for female patients, both from the patient’s and the physician’s perspective.

For quality of life goals, the largest differences were seen for “Disease control without medication” and “Make sufficient use of health care services”, which was more important to patients, both male and female ([Supplementary Figure S3](#)).

Subgroups Psychiatrists in Private Practice vs Psychiatrists in Hospitals/PIA

Ranking

Avoiding fatigue was significantly more often stated by psychiatrists than patients to be the top priority treatment goal, irrespective of treatment by psychiatrists in private practice or a hospital. On the other hand, significantly more patients than physicians stated that they prioritized the avoidance of cardiac or other organ dysfunction, also irrespective of treatment by private practice- or hospital-based physicians.

Rating

In the rating of effectiveness goals, the largest spread was again seen in “Being able to enjoy”, which was more important to patients than physicians of either category ([Supplementary Figure S4](#)). Additionally, patients treated by psychiatrists in private practice seemed to consider “Improving the mood” more important than others. “No self endangerment” seemed to be more important to patients treated in hospitals or PIA than to their physicians.

In the category tolerability, again marked differences between patients and physicians were seen in the goals in “No fatigue”, “No cardiac/other organ dysfunction” and “No metabolic disturbances”, but no differences between subgroups of patients or physicians ([Supplementary Figure S5](#)).

Regarding the quality of life category, the largest spread was found for “Make sufficient use of health care services” ([Supplementary Figure S6](#)). It seemed that psychiatrists in private practice found this more important than hospital-based psychiatrists, but still less important than either subgroup of patients.

Discussion

Here, we examined treatment goals in subgroups of patients with schizophrenia in comparison to the treatment goals that their treating physicians have in mind for these patients. We received answers from 28 physicians and 80 associated patients (up to 3 patients per physician). In general, our results are comparable to those reported earlier for the total cohort.⁹ No subgroup stood out as markedly different from the total cohort. Therefore, there is no subgroup that warrants different ways of discussing treatment goals with their psychiatrists; we consider the discussion of treatment goals equally important between all patients with schizophrenia and their psychiatrists.

Many patients reported that they considered avoiding cardiac or other organ dysfunction as a priority, whereas physicians tended to favor the avoidance of fatigue/slowing down. This is probably because “cardiac or other organ dysfunction” immediately evokes the perception of imminent danger in a patient, but physicians know that the risk for these events is comparably low. Conversely, physicians are well aware that many patients report feelings of fatigue or slowing down.

We previously reported results of a subgroup analysis of inpatients versus outpatients.⁹ These subgroups have some overlap with the subgroups of patients treated by psychiatrists in private practice vs patients treated by hospital/PIA-based psychiatrists as discussed here, but the ambulatory patients treated in the hospital affiliated PIA (11 patients) belong to the latter group in the new analysis.

Disease duration is critical in the treatment of patients with schizophrenia, since patients with first-episode psychosis show superior treatment responses when compared to patients with chronic schizophrenia, and there is loss of grey matter over time.¹² Therefore, subgroups of patients with shorter vs longer disease duration and younger vs older patients are of clinical interest. We considered the subgroups stratified by disease duration more informative in this regard. We found it noteworthy that 30% of the patients with a shorter disease duration ≤ 5 years stated that “more motivation/more drive/more energy/less exhaustion” was the most important efficacy treatment goal for them, while for patients with longer duration, focus shifted to “reduction of hallucinations” (24% of the patients). This might be due to the reduction in performance and energy that many patients experience in the prodromal phase, and a wish to return to levels from before the disease state. However, only a few patients in our sample ($n = 13$) had a disease duration of ≤ 5 years.

On the whole, we saw only small variations in average rating scores, making it difficult to identify differences between groups. A similar problem had been found previously in a study by Bridges et al.⁵

In previous studies, subsets of patients with different preferences regarding treatment goals were identified. Bridges and colleagues found two groups in a cohort of 100 patients with schizophrenia from the UK, Italy and Germany, half of which emphasized clinical goals, including reduction of symptoms, hospitalizations and anxiety. The other half of the patients prioritized functional goals, including improved relationships, increased interest in work, experiencing more emotions, and ability to socialize.¹⁰ The authors checked the two groups for differences in age, sex, time since diagnosis, and other characteristics, but only found a trend for one variable: the group who preferred functional goals had a greater proportion of patients treated with long-acting injectable antipsychotics. The authors concluded that individuals with a recent onset of psychosis (≤ 35 years of age who had been diagnosed within the past 5 years) did not differ from other individuals with schizophrenia and are evenly distributed between the groups preferring clinical or functional goals. This is largely in line with our results, as we did not see clear-cut differences between the subgroups of younger and older patients, or patients with shorter or longer disease duration.

Zipursky et al asked 300 patients with psychotic disorders to partake in a survey and identified three groups, which they labelled “achievement-focused” (patients who set a job, independent living, being in a long-term relationship, and being free from psychotic symptoms as goals), “stability-focused” (patients who did not want a job, wanted to live

independently, and were ready to accept some ongoing psychotic symptoms), and “health-focused” (patients who did not want a job, preferred to live in supervised housing, and wanted to be free from psychotic symptoms).¹¹ In logistic regression analysis, the authors found that neither age nor duration of treatment could be identified as significant predictors concerning the question as to which group a patient belonged to. Belonging to the “achievement-focused” group was predicted by greater severity of psychotic symptoms, lower education, and lower socioeconomic status.

In an analysis of the CATIE study, Rosenheck et al reported on the treatment goals of 1281 patients with schizophrenia.¹³ Using cluster analysis, they identified two subgroups: a “recovery cluster” of patients who had higher preferences for improving social relationships, work and personal energy, and a “medical model cluster” of patients who had higher preferences for improving symptoms, confusion and side-effects. Stepwise regression analysis showed that patients of the “recovery cluster” showed higher well-being, greater total income, and lower scores on the Positive and Negative Syndrome Scale positive subscale.

Of note, the three mentioned studies found differences between subgroups when patients were allocated to subgroups based on goal preferences, but no differences between subgroups when patients were allocated to subgroups based on age or duration of treatment. We therefore consider that these results are well in line with ours.

Our study has several limitations: We used answers from a convenience sample of psychiatrists and patients who were ready to answer the questionnaires, no calculation for statistical power was done. The subgroups studied here were made up of small numbers of patients and physicians and were not powered for detecting differences. No adjustments were made for multiple testing. All analyses reported here are exploratory in nature.

On the whole, we consider it vital that psychiatrists and patients discuss treatment goals and make shared decisions on steps to reach these. Treatment goals from psychiatrist and patient perspectives may, among other things, influence medication choice. For example, when a patient emphasizes clear thinking as a treatment goal, and the psychiatrist considers avoidance of fatigue and slowing down most important, this precludes the use of haloperidol or olanzapine. We expect that failure to align on treatment goals would make it harder to reach goals, jeopardize the trust between the patient and the treating psychiatrist, and therefore affect the very foundation of treatment. This underscores the importance of regular, thorough discussions of treatment goals with each individual patient.

Conclusions

We did not find marked differences between the subgroups studied here. For all patients, agreement with physicians on treatment goals was fairly high. Patients tended to focus a bit more on clear thinking and goals pertaining to everyday life. Furthermore, patients and physicians focused on different side effects to avoid.

Abbreviations

CGI-S, Clinical Global Impression – Severity score; ICD, International Statistical Classification of Diseases and Related Health Problems; PIA, *Psychiatrische Institutsambulanz* (psychiatric hospital outpatient department); QoL, Quality of life; SD, Standard deviation.

Data Sharing Statement

The data that form the basis for this article are available from the corresponding author upon reasonable request.

Ethics Approval and Informed Consent

The survey conducted within this study was presented to the International Medical and Dental Ethics Commission IMDEC, Freiburg, by Anfomed (the clinical research organization in charge of conducting the survey) resulting in a positive vote. IMDEC offers independent ethical and legal reviews of all types of human-subjects research. The approval of ethics committees in other locations would only be sought if necessary. This procedure was agreed upon with GG. Participating physicians informed eligible patients verbally and in writing about the purpose and procedure as well as other details (including data protection) in connection with the interview. The patient was given a patient information leaflet containing all relevant points and, after an appropriate reflection period, gave written consent to participate. This study complies with the Declaration of Helsinki.

Acknowledgments

We would like to thank Katharina Stengler and Stefan Klingberg for taking part in the initial expert panel and contributing to the selection of goals and patient vignettes. Also, we would like to thank all those physicians and patients taking part in the Delphi-Panel-survey. Special thanks are due to Stefanie Schell and her therapy group of affected patients who translated medical terminology into everyday language to simplify for a better understanding. The survey was conducted by Anfomed.

Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

Funding

The Delphi panel was performed with an unrestricted educational grant of Lundbeck GmbH and Otsuka Pharma GmbH without involvement in the design, data collection, interpretation of the data and manuscript writing as well as the decision to publish the results.

Disclosure

Dr. Gründer has served as a consultant for AbbVie, Beckley Psytech, Boehringer Ingelheim, Bristol-Myers Squibb, the Institute for Quality and Efficiency in Health Care (IQWiG), Johnson & Johnson, Lundbeck, MindMed, Otsuka, Recordati, Roche, and ROVI. He has served as a speaker for Johnson & Johnson, Lundbeck, Otsuka, and Recordati. He has received research support from Beckley Psytech, Boehringer Ingelheim, and MindMed. He is co-founder and/or shareholder of Mind and Brain Institute GmbH (Zornheim, Germany), OVID Health Systems GmbH, OVID Clinic Berlin GmbH, OVID Beteiligungsgesellschaft mbH, OVID Tagesklinik GmbH & Co. KG and MIND Foundation gGmbH (Berlin, Germany). Bauknecht was an employee of Dr. Carl GmbH when this study was conducted. Dr. Schell received speaker's fees and travel reimbursements from Janssen-Cilag, Lundbeck, and Otsuka. Dr. Leopold received speaker's fees and travel reimbursements from Janssen-Cilag, Lilly, Lundbeck, Otsuka, and Recordati. She has received grant support from Otsuka and Janssen-Cilag. Dr. Paulzen received speaker's fees from Lundbeck and Neuraxpharm. Dr. Leucht has received honoraria for service as a consultant or adviser and/or for lectures from Angelini, Boehringer Ingelheim, Gedeon Richter, Janssen, Johnson & Johnson, LB Pharma, LTS Lohmann, Lundbeck, MSD, Otsuka, Recordati, Sandoz, Sanofi-Aventis, Sunovion, and TEVA. The authors report no other conflicts of interest in this work.

References

1. Fulford D, Meyer-Kalos PS, Mueser KT. Focusing on recovery goals improves motivation in first-episode psychosis. *Soc Psychiatry Psychiatr Epidemiol.* **2020**;55(12):1629–1637. doi:10.1007/s00127-020-01877-x
2. Correll CU. Pharmacotherapy of schizophrenia. *Nervenarzt.* **2020**;91(1):34–42. doi:10.1007/s00115-019-00858-z
3. Klein E, Rosenberg J, Rosenberg S. Whose treatment is it anyway? The role of consumer preferences in mental health care. *Am J Psych Rehab.* **2007**;10(1):65–80. doi:10.1080/15487760601166365
4. Kuhnigk O, Slawik L, Meyer J, Naber D, Reimer J. Valuation and attainment of treatment goals in schizophrenia: perspectives of patients, relatives, physicians, and payers. *J Psychiatr Pract.* **2012**;18(5):321–328. doi:10.1097/01.pra.0000419816.75752.65
5. Bridges JF, Slawik L, Schmeding A, Reimer J, Naber D, Kuhnigk O. A test of concordance between patient and psychiatrist valuations of multiple treatment goals for schizophrenia. *Health Expect.* **2013**;16(2):164–176. doi:10.1111/j.1369-7625.2011.00704.x
6. Ascher-Svanum H, Nyhuis AW, Stauffer V, et al. Reasons for discontinuation and continuation of antipsychotics in the treatment of schizophrenia from patient and clinician perspectives. *Curr Med Res Opin.* **2010**;26(10):2403–2410. doi:10.1185/03007995.2010.515900
7. Arvidsson H. Gender differences in needs and care of severely mentally ill persons: findings from a Swedish cross-sectional and longitudinal study. *Int J Soc Psychiatry.* **2010**;56(4):424–435. doi:10.1177/0020764009106631
8. Gründer G, Bauknecht P, Klingberg S, et al. Treatment goals for patients with schizophrenia - a narrative review of physician and patient perspectives. *Pharmacopsychiatry.* **2021**;54(2):53–59. doi:10.1055/a-1298-4546
9. Gründer G, Bauknecht P, Schell S, Leopold K, Paulzen M, Leucht S. Identification and rating of treatment goals in schizophrenia: delphi process and concordance survey in matched physician-patient pairs. *Patient Prefer Adherence.* **2025**;19:1029–1046. doi:10.2147/PPA.S499331

10. Bridges JF, Beusterien K, Heres S, et al. Quantifying the treatment goals of people recently diagnosed with schizophrenia using best-worst scaling. *Patient Prefer Adherence*. 2018;12:63–70. doi:10.2147/PPA.S152870
11. Zipursky RB, Cunningham CE, Stewart B, Rimas H, Cole E, Vaz SM. Characterizing outcome preferences in patients with psychotic disorders: a discrete choice conjoint experiment. *Schizophr Res*. 2017;185:107–113. doi:10.1016/j.schres.2016.12.018
12. Lieberman JA, Small SA, Girgis RR. Early detection and preventive intervention in schizophrenia: from fantasy to reality. *Am J Psychiatry*. 2019;176(10):794–810. doi:10.1176/appi.ajp.2019.19080865
13. Rosenheck R, Stroup S, Keefe RS, et al. Measuring outcome priorities and preferences in people with schizophrenia. *Br J Psychiatry*. 2005;187(6):529–536. doi:10.1192/bjp.187.6.529

Patient Preference and Adherence

Dovepress
Taylor & Francis Group

Publish your work in this journal

Patient Preference and Adherence is an international, peer-reviewed, open access journal that focusing on the growing importance of patient preference and adherence throughout the therapeutic continuum. Patient satisfaction, acceptability, quality of life, compliance, persistence and their role in developing new therapeutic modalities and compounds to optimize clinical outcomes for existing disease states are major areas of interest for the journal. This journal has been accepted for indexing on PubMed Central. The manuscript management system is completely online and includes a very quick and fair peer-review system, which is all easy to use. Visit <http://www.dovepress.com/testimonials.php> to read real quotes from published authors.

Submit your manuscript here: <https://www.dovepress.com/patient-preference-and-adherence-journal>