Patient Outcomes of Flexible Assertive Community Treatment Compared With Assertive Community Treatment

Camilla Munch Nielsen, Ph.D., Carsten Hjorthøj, Ph.D., Benjamin Thorup Arnfred, Ph.D., Merete Nordentoft, Ph.D., D.M.Sc.

Objective: In many European countries, flexible assertive community treatment (FACT) has replaced assertive community treatment (ACT) despite limited evidence for FACT's effectiveness in improving functional and patient-reported outcomes. This study evaluated the effectiveness of FACT relative to ACT in improving functioning, client satisfaction, and the working alliance.

Methods: The authors used a nonblinded, quasi-experimental controlled study design to compare outcomes of patients treated by ACT teams that were reconfigured to FACT teams with those of patients treated by a remaining ACT team. Patients from nine ACT teams in the Capital Region of Denmark were included. Six of the nine ACT teams were reconfigured to FACT in 2018 and 2019 by integrating them with community mental health teams. The remaining three ACT teams were used as control groups. Assignment to treatment was based solely on administrative considerations.

Results: The study included 131 patients (FACT, N=74; ACT, N=57). Patients treated by FACT teams had poorer personal and social functioning than patients assigned to ACT teams (adjusted difference in means=−2.9, 95% CI=−5.8 to −0.1). No between-group differences were found in client satisfaction or working alliance.

Conclusions: Patients treated by FACT teams had significantly lower functioning than patients treated by ACT teams, but the clinical relevance or causality of this finding remains unclear. Given the reconfiguration of the FACT teams during follow-up, along with substantial drop-out rates and baseline differences between the two groups, these results must be interpreted with caution. The findings require further examination in a randomized controlled trial that includes fidelity measures of the treatment models.

Psychiatric Services 2023; 74:695–701; doi: 10.1176/appi.ps.20220235

In many Western countries, assertive community treatment (ACT) has been the dominant community-based mental health care model for patients with severe mental illness (1). Specialist ACT teams were designed to provide intensive support for patients who have difficulties engaging with standard treatment (e.g., dropping out of services or not adhering to their medication) and are frequent users of inpatient services (2). A key feature of the ACT model is the assertive outreach approach involving frequent home visits and continuous efforts to maintain contact with patients. ACT team members share responsibility for their patients and operate with small caseloads (1). Studies across different countries have provided strong evidence that ACT effectively improves engagement with services and satisfaction with care (3–6), and the Danish national clinical guideline for patients with schizophrenia and complex mental health needs strongly encourages the implementation of ACT teams (7).

However, a Dutch community-based mental health service model called flexible ACT (FACT) has replaced ACT teams in several European countries (8–10). FACT combines principles from ACT and less intensive service to provide treatment to a broader group of patients with severe mental illness (8). The flexibility part of the FACT model is the ability to adjust the intensity of care within the same team. When needed, staff can upgrade the support to intensive team-based care and switch to individual case management when the patient is stable (8). A major difference between

HIGHLIGHTS

- Changing from assertive community treatment (ACT) to flexible ACT (FACT) was associated with lower levels of personal and social functioning.
- The change was not associated with a change in client satisfaction or working alliance.
- Further investigation of the efficacy of FACT versus ACT is required in randomized controlled trials.

TABLE 1. Characteristics of assertive community treatment (ACT) and flexible ACT (FACT) in Denmark

Characteristic	FACT	ACT
Target group	All patients with severe mental illness	Patients with severe mental illness (*ICD-10* codes F20, F22, F25, F31) who frequently use inpatient care and often have difficulty engaging with health care services
Patients per treatment team	250–300[a]	80–100
Cases per case manager	20–30[b]	12–15
Treatment team composition	Multidisciplinary: nurses, social workers, psychiatrists, psychologists, occupational therapists, and peer workers	Multidisciplinary: nurses, social workers, psychiatrists, psychologists, and occupational therapists
Contact of treatment team with patients	Mainly home visits or meeting patients in their local surroundings	Mainly home visits or meeting patients in their local surroundings
Treatment team roles	Therapy and illness management; the team also provides some practical assistance, social support, and help with social security benefits. Team members coattend meetings with external service providers and visit patients who are admitted to hospital.	Therapy and illness management; the team also provides some practical assistance, social support, and help with social security benefits. Team members coattend meetings with external service providers and visit patients who are admitted to hospital.
Approach	Team approach when the care of the patient is upgraded to the more intensive level; individual case management when the patient is stabilized	Team approach

[a] The FACT manual recommends 180–220 patients per team.

[b] The FACT manual recommends a staff-to-patient ratio of 1:20. A staff-to-patient ratio of 1:15 or lower is required to reach the highest fidelity level on the 2010 FACT.

the FACT and ACT models is that caseloads are higher in FACT (Table 1) (8). ACT is also more specialized because it targets a specific group of patients with mainly psychotic illness who have difficulties engaging in traditional treatment settings.

The FACT model has been adopted in Denmark by merging ACT and community mental health teams (CMHTs) (10). The mental health care authorities in the Capital Region of Denmark identified a need to reorganize these services because the process of discharging ACT patients to CMHTs was inadequate and unclear. Moreover, the purpose of implementing FACT was to improve services for the larger group of patients from CMHTs who do not require ACT but may have periods of destabilization. CMHTs had limited resources to intensify treatment, so some patients under the care of a CMHT were not receiving appropriate support.

The evidence for the effectiveness of FACT relative to ACT is limited and inconsistent. Recently, we evaluated the effect of FACT versus ACT in a register-based, quasi-experimental controlled study in the Capital Region of Denmark (10). We found that FACT provided more intensive service in terms of additional outpatient contacts. No difference was found between FACT and ACT in total inpatient days. The scientific literature on FACT has mainly focused on health service use (11–13), and gaps in the literature exist on outcomes considered particularly important from the patient perspective (e.g., functional outcomes and satisfaction with services). One study from the United Kingdom has explored patient-reported outcomes among former ACT users who moved to a FACT team (12). In that pre-post study, the authors found no significant differences in client satisfaction, team attachment, and loneliness after enrollment in a FACT team. However, a major limitation of the pre-post design is the risk for overestimating the positive effects because remission often increases over time, independently of treatment (14). Therefore, studies with control group comparisons are needed to offer more insight into the outcomes of transferring patients from ACT to FACT teams.

In this study, we examined the effect of FACT versus ACT on personal and social functioning, client satisfaction, and the working alliance. We hypothesized that because of FACT's higher caseloads, replacing ACT teams with FACT teams would have an adverse impact on patients' level of functioning and satisfaction and the working alliance.

METHODS

Study Design and Setting

We conducted a quasi-experimental controlled study comparing functioning and satisfaction and the working alliance between patients treated by ACT teams that had been reconfigured to FACT teams and patients who remained in ACT teams. The study was embedded in a broader evaluation of FACT in the Capital Region of Denmark (10, 11). We did not assign patients to treatment. Instead, patients were allocated to treatment on the basis of administrative considerations, making the study a natural experiment (15). Patients from nine urban ACT teams in the Capital Region of Denmark were included. The FACT and ACT groups were similar in socioeconomic distribution and catchment area.

Six of the nine ACT teams were reconfigured to FACT teams in 2018 and 2019 by integrating ACT teams and CMHTs. This reconfiguration affected all patients treated by the ACT teams and CMHTs, so patients were not individually selected for transfer to FACT. The patients of the remaining three ACT teams constituted the control group. The baseline assessments took place in 2018 and 2019 before the six ACT teams were reconfigured into FACT teams, and follow-up assessments took place approximately 1 year after. The ACT teams followed the nationally recognized ACT model (7), and the FACT teams worked according to the Dutch FACT manual (8).

Recruitment and Data Collection

We retrieved a list from the Danish National Patient Register of a sample of patients who received treatment in the nine ACT teams at baseline (before FACT was implemented) (16). Using this list, we asked the case managers in these teams to inform the patients about the study and invite them to participate. We tried to avoid bias by recruiting only the patients on the list rather than recruiting volunteers or patients chosen by the case managers. However, if a case manager did not find it suitable to invite a patient, that patient was excluded. Reasons for exclusion by case managers included concerns about the patient's capacity to provide valid informed consent or meaningful answers, concerns that the patient was too unwell to participate, or lack of contact of the ACT team with the patient.

If the patient agreed to participate, we scheduled an assessment without the case manager. However, in some circumstances, the case manager was present at the patient's request or for personal safety (e.g., if the patient was court ordered to receive treatment). Most participants preferred to be interviewed at home. Other participants were interviewed at the team office. Because of COVID-19 restrictions, some follow-up interviews were conducted via telephone (N=15).

Outcome Measures

The primary outcome was the difference in personal and social functioning between FACT- and ACT-assigned patients as measured with the Personal and Social Performance (PSP) scale. The PSP is observer rated and a valid and reliable scale for measuring social functioning of patients with schizophrenia (17, 18). The PSP scale measures functioning in the month preceding the interview in four domains: socially useful activities, personal and social relationships, self-care, and disturbing and aggressive behaviors (19). Possible scores range from 1 to 100, with higher scores indicating better functioning; ratings are based on the patients' verbal reports of their daily living and clinical observations (17). The assessments were conducted by researchers who were trained in using the PSP scale.

We also measured the working alliance with the Working Alliance Inventory (WAI). The WAI is a self-report questionnaire that measures different aspects of the professional relationship between patient and health care provider (20). The WAI incorporates questions about communication, trust, and agreement on goals and tasks between the patient and the health care provider. In this study, we used the WAI short form with 12 items rated by the patients (WAI-C) (21); possible scores range from 12 to 84, with higher scores indicating a better working alliance. Finally, client satisfaction was measured with the self-report Client Satisfaction Questionnaire–8 (CSQ-8); possible scores range from 8 to 32, with higher scores indicating higher client satisfaction (22, 23).

Sample Size Calculation

The sample size calculation was based on the PSP scale to estimate treatment effects, a priori defined to be the between-group difference in scores after 1 year. A Cohen's d of 0.7 was considered a clinically relevant difference on this scale, assuming a difference of seven points between the groups and a pooled standard deviation of 10 points (17). With a two-sided alpha of 0.05 and statistical power of 80%, 33 participants in each group were predicted to be required to detect a clinically relevant Cohen's d effect size. However, in a nonrandomized study, the sample size must be increased to account for covariance adjustment (24). We therefore chose a more conservative effect size for the sample size calculation, that is, a Cohen's d of 0.5, assuming a difference of five points between the groups and a pooled standard deviation of 10 points. With a two-sided alpha of 0.05 and statistical power of 80%, we anticipated that 64 participants in each group were required to detect a clinically relevant Cohen's d effect size.

Statistical Analysis

We used an intention-to-treat approach in which patients were analyzed in the treatment group to which they were allocated through the recruitment procedure, and all patients discharged from the teams were retained in the analysis. We did not use imputation methods to deal with missing data because a large proportion of participants was lost to follow-up (25). Differences in baseline characteristics between the two treatment groups were assessed with chi-square tests for categorical variables, t tests for normally distributed continuous variables, and two-sample Wilcoxon rank sum tests for nonnormally distributed continuous variables. Differences between the FACT and ACT groups in mean overall functioning, client satisfaction, and working alliance at follow-up were analyzed by using analysis of covariance adjusted for baseline differences between the two groups. Analyses were done in R, version 3.6.1.

Ethical Considerations

Independent researchers conducted all assessments, and participants were informed that individual scores and comments were anonymous and would not be shared with their clinicians. All participants gave written informed consent. The Danish Data Protection Agency approved the project

TABLE 2. Baseline characteristics of 131 participants in the FACT and ACT groups[a]

	FACT (N=74)		ACT (N=57)		
Characteristic	N	%	N	%	p[b]
Female sex	35	47	22	39	.413
Substance use	17	23	23	40	.051
Schizophrenia spectrum disorder	60	81	46	81	1.000
Employed[c]	7	10	12	21	.106
Age (M±SD years)	48.0±12.2		50.0±13.3		.494
PSP score (M±SD)[d]	36.8±7.6		43.3±13.1		.001
CSQ-8 score (M±SD)[e]	25.9±4.6		26.0±5.6		.950
WAI score (M±SD)[f]	65.3±12.8		67.1±14.3		.492
Outpatient contacts (median, range)	26	0–107	23	0–107	.844
Psychiatric bed-days (median, range)	0	0–93	0	0–277	.152

[a] ACT, assertive community treatment; FACT, flexible assertive community treatment.

[b] p values were estimated with chi-square tests, two-sample t tests, or Wilcoxon rank sum tests.

[c] Employed in a full-time, part-time, or subsidized job.

[d] PSP, Personal and Social Performance scale; possible scores range from 1 to 100, with higher scores indicating better functioning.

[e] CSQ-8, Client Satisfaction Questionnaire–8; possible scores range from 8 to 32, with higher scores indicating higher client satisfaction.

[f] WAI, Working Alliance Inventory; possible scores range from 12 to 84, with higher scores indicating better working alliance.

through the Capital Region of Denmark (approval no. RHP-2017-006). The Danish Patient Safety Authority deemed our protocol to be exempt from formal approval because it was regarded as a quality assurance project (no. 3-3013-2207/1).

RESULTS

For this study, the Danish National Patient Register provided a list of 319 eligible patients who received treatment from one of the nine ACT teams. Of these patients, 83 were excluded because of clinician concerns (N=69) or no contact with the ACT team (N=14). Two hundred thirty-six ACT patients were offered to participate in the study, 131 of whom gave written informed consent (FACT, N=74; ACT, N=57). (A diagram showing the recruitment of study participants is available in the online supplement to this article.)

Participants (N=131) and nonparticipants (e.g., those who declined to participate or were excluded; N=188) did not significantly differ in sex, substance use, number of bed-days, or outpatient contacts in the year before the start of the study. However, the nonparticipant group had a higher proportion of patients with schizophrenia spectrum disorder (participants, 81%; nonparticipants, 93%, p=0.003), and nonparticipants tended to be younger (participants, median age=49 years; nonparticipants, median age=46 years, p=0.039).

Descriptive Characteristics

The baseline characteristics of FACT and ACT patients were similar in most areas (Table 2). The two groups significantly differed in functioning (FACT group mean±SD PSP scale score=36.8±7.6; ACT group PSP scale score=43.3±13.1, p=0.001) and substance use (23% for the FACT group vs. 40% for the ACT group, p=0.051) at baseline. We adjusted the results at follow-up for baseline PSP ratings and substance use to account for these potential confounding covariates. The median time from ACT at baseline to FACT reconfiguration was 163.5 days (range 30–517 days). In cases in which the reconfiguration was delayed, this delay was reflected in the time to the follow-up assessment, ensuring time for any changes to occur; thus, the median time from reconfiguration to follow-up for the FACT group was 297 days (range 207–643 days).

Analysis of Attrition

Of the 131 participants assessed at baseline, 71 consented to participate in the 1-year follow-up assessment. We found no significant differences between those who participated at baseline and those who participated at follow-up with regard to the measured baseline characteristics (age; diagnosis; sex; substance use; employment; PSP, CSQ, and WAI scores; number of bed-days; and number of outpatient contacts in the year before baseline).

Follow-Up

At the 1-year follow-up, 33 of the 71 patients who agreed to participate had been discharged from the teams (19 FACT patients and 14 ACT patients). PSP ratings indicated a higher level of functioning in the ACT group (Table 3). After adjusting for PSP ratings and substance use at baseline, we found that ACT patients still had on average a higher level of functioning than those in the FACT group (adjusted difference in means=−2.9, 95% CI=−5.8 to −0.1). However, no statistically significant differences in client satisfaction or the working alliance were found between the two groups.

DISCUSSION

We found support for our hypothesis that patients who were treated by ACT teams that were reconfigured to FACT teams would have significantly lower functioning than patients who remained with ACT teams. However, we found no difference in client satisfaction and the working alliance between the two groups.

Few studies have focused on the effect of FACT on patient functioning (26, 27). One study evaluated the effect of FACT on functioning compared with a less intensive service and reported that FACT was associated with better functioning (26). Another study assessed the functioning of patients who received intensive support (27). The authors reported a positive change in functioning 18 months after the FACT patients had been assigned to a FACT team's intensive care.

TABLE 3. PSP, CSQ-8, and WAI scores and differences between the two groups at 1-year follow-up[a]

	FACT (N=38)	ACT (N=33)	Unadjusted			Adjusted		
Measure	M±SD	M±SD	Mean diff.	95% CI	p[b]	Mean diff.	95% CI	p[c]
PSP[d]	38.1±9.8	46.8±13.8	−8.7	−14.5 to −2.9	.004	−2.9	−5.8 to −.1	.045
CSQ-8[e]	24.6±5.6	26.9±3.9	−2.3	−4.8 to .1	.064	−2.1	−4.7 to .6	.119
WAI[f]	60.9±14.4	65.4±14.7	−4.5	−12.1 to 3.1	.237	−1.7	−9.5 to 6.2	.671

[a] CSQ, Client Satisfaction Questionnaire; mean diff., difference in means; PSP, Personal and Social Functioning scale; WAI, Working Alliance Inventory.

[b] p values were estimated with two-sample t tests.

[c] p values were estimated with two-way analyses of covariance, adjusted for differences in baseline characteristics between the groups (substance use and PSP score at baseline).

[d] Possible scores range from 1 to 100, with higher scores indicating better functioning.

[e] Possible scores range from 8 to 32, with higher scores indicating higher client satisfaction.

[f] Possible scores range from 12 to 84, with higher scores indicating a better working alliance.

Our study is the first to compare measures of functioning between patients receiving FACT and ACT. The lower levels of functioning observed in the FACT group relative to the ACT group may indicate that factors characteristic of more intensive care may be challenging to implement in FACT. One of the main goals of the ACT model is to improve functioning with an approach that goes beyond medication management, such as supporting a patient's social activities and helping with practical matters (28, 29). Small caseloads in ACT ensure sufficient time is available for these services, and available time may be reduced in FACT because of the larger caseloads in this treatment model. However, we note that caseloads cannot be easily compared between ACT and FACT, because the frequency of contacts varies between the two models.

In line with findings in a previous study, we did not find any between-group differences in client satisfaction (12). Patients treated by the FACT and ACT teams were generally satisfied with their treatment and had a positive view of the relationship with their case manager. The patient-clinician alliance is an important factor for effective treatment, and in studies of patients with severe mental illness, a good working alliance has been associated with reduced symptom severity, improved quality of life, and better adherence with medication (30–32). The patient-clinician working alliance has been extensively examined in psychotherapy research (33, 34). However, this alliance is less explored in the field of case management, and we found no other FACT studies that used a measure of the alliance. Many of the ACT patients whose treatment was reconfigured to FACT kept the same case manager during the reconfiguration, which may partly explain why we did not find a difference in the working alliance between the two groups.

Implications

We found a statistically significant difference in patient functioning between the FACT and ACT groups. However, the literature indicates that a difference of 2.9 points on a scale that runs to 100 may be too low to be considered clinically meaningful (typically defined as a difference of seven points between groups) (17, 18).

Our study makes an important contribution to the limited research on the effectiveness of FACT compared with ACT. Research on the effect of FACT has provided mixed results and has mainly focused on mental health care use (10, 11). A U.K. pre-post study reported that patients who transferred from ACT to FACT had fewer admissions, inpatient days, and outpatient contacts (11). These results could not be replicated in a Danish controlled study (10), which found no differences in inpatient days between FACT and ACT. The Danish study also demonstrated that FACT was likely to be a more intensive service in terms of increased outpatient contacts compared with ACT. When we consider the results of this study together with the few previous studies on mental health care use, whether FACT is a beneficial alternative to ACT remains uncertain. Our findings emphasize the importance of promoting interventions for the group of patients previously targeted by ACT teams.

This study has several implications for future research. First and foremost, future studies should aim to evaluate the FACT model through randomized controlled trials. Moreover, the literature on FACT has not assessed whether this model effectively sustains contact with patients. Extensive studies have shown that ACT is better than standard care at maintaining patient contact (3–6). We strongly recommend that future studies include measures of engagement with services in the evaluation of FACT compared with ACT. Finally, future studies on functional outcomes should also include a comparison of FACT with CMHTs.

Strengths and Limitations

To our knowledge, this is the first study using a control group to compare FACT with ACT on patient functioning, the working alliance, and client satisfaction. We thereby overcame the main limitation of previous studies that lacked control group comparisons. The PSP assessments were conducted by independent researchers who were not involved in the treatment of patients. This study feature is a strength because the researchers could not influence the amount of support given to the study participants.

Our study also had several limitations. First, randomization to FACT or ACT was not feasible. Unknown or unmeasured confounders could have therefore biased the results. Second, the interviews were carried out by researchers who were not blind to treatment condition. This lack of blinding may have influenced the researchers' reporting of the results. Third, before the recruitment of participants, we calculated the sample size but did not recruit enough participants to the control group. This underrecruitment may have resulted in a lack of statistical power and a greater probability of a type II error. Fourth, a substantial drop-out rate reduced the sample size available for analyses at the 1-year follow-up, which may have caused a biased estimate of the parameters and weakened the generalizability of the findings. No differential attrition was found between the two groups, but we cannot exclude the possibility that participants and nonparticipants may have differed on unobserved data. However, we could compare the two groups on register-based outcomes, which were available for all participants regardless of attrition status. Fifth, the two groups differed in PSP scores at baseline. However, we adjusted for this difference in the analyses. Finally, we did not conduct fidelity assessments, so we could not assess the extent to which the teams in our study were practicing according to their defined models of care.

The FACT teams in this study were in the start-up phase, whereas the ACT teams were well established. This differential between the two groups could have resulted in two types of bias. It could have led to improved effectiveness of FACT because of the pioneer effect, meaning that a newly established team may have more engaged and motivated staff, or it could have reduced effectiveness because the FACT teams had limited experience with the FACT model compared with ACT. Moreover, some patients changed case managers during the transfer to FACT, whereas ACT case managers stayed the same throughout and could have benefited from previous alliances with patients.

CONCLUSIONS

We found that patients served by ACT teams that were reconfigured into FACT teams had significantly lower functioning than patients who remained in ACT treatment. However, the difference in functioning between the two patient groups at follow-up was considerably smaller than the initial difference at baseline. The observed difference in functioning at follow-up may be too low to be considered clinically relevant, and whether this difference is attributable to differences in care management and administration between the FACT and ACT models is unclear. Our results require further examination in a randomized controlled trial that includes fidelity measures of the treatment models.

AUTHOR AND ARTICLE INFORMATION

Copenhagen Research Center for Mental Health, Mental Health Center Copenhagen, Copenhagen University Hospital, Copenhagen (all authors); Section of Epidemiology, Department of Public Health, University of Copenhagen, Copenhagen (Hjorthøj). Send correspondence to Dr. Munch Nielsen (camilla.munch.nielsen@regionh.dk).

This study was funded by Mental Health Services in the Capital Region of Denmark. The authors thank the patients for participating in this study and sharing their experiences. The authors also acknowledge the practitioners in the flexible assertive community treatment and assertive community treatment teams for facilitating the recruitment.

The authors report no financial relationships with commercial interests.

Received April 25, 2022; revisions received June 9 and August 5, 2022; accepted October 4, 2022; published online December 7, 2022.

REFERENCES

1. Bond GR, Drake RE: The critical ingredients of assertive community treatment. World Psychiatry 2015; 14:240–242
2. Danish Health Authority: Danish National Clinical Guidelines for Patients With Schizophrenia and Complex Mental Health Needs [National Klinisk Retningslinje for Behandling Af Patienter Med Skizofreni Og Komplekse Behandlingsforløb]. Copenhagen, Sundhedsstyrelsen, 2015
3. Dieterich M, Irving CB, Bergman H, et al: Intensive case management for severe mental illness. Cochrane Database Syst Rev 2017; 1:CD007906
4. Thoegersen MH, Morthorst BR, Nordentoft M: Assertive community treatment versus standard treatment for severely mentally ill patients in Denmark: a quasi-experimental trial. Nord J Psychiatry 2019; 73:149–158
5. Sytema S, Wunderink L, Bloemers W, et al: Assertive community treatment in the Netherlands: a randomized controlled trial. Acta Psychiatr Scand 2007; 116:105–112
6. Killaspy H, Bebbington P, Blizard R, et al: The REACT study: randomised evaluation of assertive community treatment in north London. BMJ 2006; 332:815–820
7. Baandrup L, Østrup Rasmussen J, Klokker L, et al: Treatment of adult patients with schizophrenia and complex mental health needs—a national clinical guideline. Nord J Psychiatry 2016; 70: 231–240
8. van Veldhuizen JR, Bähler M: Flexible Assertive Community Treatment: Vision, Model, Practice and Organization (Manual). Groningen, the Netherlands, J.R. van Veldhuizen & M. Bähler, 2013. https://fact-facts.nl/#fact-manual. Accessed Nov 9, 2022
9. Firn M, Hindhaugh K, Hubbeling D, et al: A dismantling study of assertive outreach services: comparing activity and outcomes following replacement with the FACT model. Soc Psychiatry Psychiatr Epidemiol 2013; 48:997–1003
10. Nielsen CM, Hjorthøj C, Killaspy H, et al: The effect of flexible assertive community treatment in Denmark: a quasi-experimental controlled study. Lancet Psychiatry 2021; 8:P27–P35
11. Firn M, White SJ, Hubbeling D, et al: The replacement of assertive outreach services by reinforcing local community teams: a four-year observational study. J Ment Health 2018; 27:4–9
12. Firn M, Alonso-Vicente M, Hubbeling D, et al: The replacement of assertive outreach services by reinforcing local community teams: a replication study reporting comparative outcomes and patient reported experience. J Ment Health 2018; 27:157–163
13. Sood L, Owen A, Onyon R, et al: Flexible assertive community treatment (FACT) model in specialist psychosis teams: an evaluation. BJPsych Bull 2017; 41:192–196
14. Wake M, Clifford S, Lycett K, et al: Natural BMI reductions and overestimation of obesity trial effectiveness. Pediatrics 2015; 135: e292–e295
15. Craig P, Cooper C, Gunnell D, et al: Using natural experiments to evaluate population health interventions: new Medical Research Council guidance. J Epidemiol Community Health 2012; 66: 1182–1186
16. Lynge E, Sandegaard JL, Rebolj M: The Danish National Patient Register. Scand J Public Health 2011; 39:30–33
17. Nasrallah H, Morosini P, Gagnon DD: Reliability, validity and ability to detect change of the Personal and Social Performance scale in patients with stable schizophrenia. Psychiatry Res 2008; 161:213–224
18. Patrick DL, Burns T, Morosini P, et al: Reliability, validity and ability to detect change of the clinician-rated Personal and Social Performance scale in patients with acute symptoms of schizophrenia. Curr Med Res Opin 2009; 25:325–338

19. Morosini PL, Magliano L, Brambilla L, et al: Development, reliability and acceptability of a new version of the DSM-IV Social and Occupational Functioning Assessment Scale (SOFAS) to assess routine social functioning. Acta Psychiatr Scand 2000; 101:323–329
20. Horvath AO, Greenberg LS: Development and validation of the Working Alliance Inventory. J Couns Psychol 1989; 36:223–233
21. Tracey TJ, Kokotovic AM: Factor structure of the Working Alliance Inventory. J Consult Clin Psychol 1989; 1:207–210
22. Larsen DL, Attkisson CC, Hargreaves WA, et al: Assessment of client/patient satisfaction: development of a general scale. Eval Program Plann 1979; 2:197–207
23. Attkisson CC, Zwick R: The Client Satisfaction Questionnaire. Psychometric properties and correlations with service utilization and psychotherapy outcome. Eval Program Plann 1982; 5:233–237
24. Hickey GL, Grant SW, Dunning J, et al: Statistical primer: sample size and power calculations—why, when and how? Eur J Cardiothorac Surg 2018; 54:4–9
25. Jakobsen JC, Gluud C, Wetterslev J, et al: When and how should multiple imputation be used for handling missing data in randomised clinical trials—a practical guide with flowcharts. BMC Med Res Methodol 2017; 17:162
26. Drukker M, Visser E, Sytema S, et al: Flexible assertive community treatment, severity of symptoms and psychiatric health service use, a real life observational study. Clin Pract Epidemiol Ment Health 2013; 9:202–209
27. Svensson B, Hansson L, Lexén A: Outcomes of clients in need of intensive team care in flexible assertive community treatment in Sweden. Nord J Psychiatry 2018; 72:226–231
28. Monroe-DeVita M, Teague GB, Moser LL: The TMACT: a new tool for measuring fidelity to assertive community treatment. J Am Psychiatr Nurses Assoc 2011; 17:17–29
29. Marshall M, Lockwood A: Assertive community treatment for people with severe mental disorders. Cochrane Database Syst Rev 2000; 2:CD001089
30. Montreuil TC, Cassidy CM, Rabinovitch M, et al: Case manager– and patient-rated alliance as a predictor of medication adherence in first-episode psychosis. J Clin Psychopharmacol 2012; 32: 465–469
31. Lim M, Li Z, Xie H, et al: The effect of therapeutic alliance on attitudes toward psychiatric medications in schizophrenia. J Clin Psychopharmacol 2021; 41:551–560
32. Shattock L, Berry K, Degnan A, et al: Therapeutic alliance in psychological therapy for people with schizophrenia and related psychoses: a systematic review. Clin Psychol Psychother 2018; 25: e60–e85
33. Doran JM: The working alliance: where have we been, where are we going? Psychother Res 2016; 26:146–163
34. Fuertes JN, Toporovsky A, Reyes M, et al: The physician-patient working alliance: theory, research, and future possibilities. Patient Educ Couns 2017; 100:610–615