

Community treatment orders and social outcomes for patients with psychosis: a 48-month follow-up study

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Abstract

Purpose: Community treatment orders (CTOs) are widely used internationally despite a lack of evidence supporting their effectiveness. Most effectiveness studies are relatively short (12-months or less) and focus on clinical symptoms and service data, while little attention is given to patients' social outcomes and broader welfare. We tested the association between the duration of CTO intervention and patients' long-term social outcomes.

Methods: A sub-sample (n = 114) of community-based patients from the Oxford Community Treatment Order Evaluation Trial (OCTET) were interviewed 48-months after randomisation. Multivariate regression models were used to examine the association between the duration of the CTO intervention and social outcomes as measured by the Social Network Schedule (SNS), Objective Social Outcomes Index (SIX), Euro-QoL EQ-5D-3L (EQ-5D), and Oxford Capabilities Questionnaire for Mental Health (OxCAP-MH).

Results: No significant association were found between the duration of CTO intervention and social network size (IRR = 0.996, p = .63), objective social outcomes (B = -0.003, p = .77), health-related quality of life (B = 0.001, p = .77), and capabilities (B = 0.046, p = .41). There were no between-group differences in social outcomes when outcomes were stratified by original arm of randomisation. Patients had a mean of 10.2 (SD = 5.9) contacts in their social networks, 42% of whom were relatives.

Conclusions: CTO duration was not associated with improvements in patients' social outcomes even over the long-term. This study adds to growing concerns about CTO effectiveness and the justification for their continued use.

Introduction

Community treatment orders (CTO) provide a legal framework within which patients with a history of repeated relapse and readmission can be required to accept treatment while living outside of hospital. They are usually imposed following a period of involuntary hospitalisation to help stabilise the patient and protect against relapse and readmission.

CTOs currently exist in more than 75 jurisdictions in North America, Australasia and Europe [1, 2]. In England and Wales CTOs came into law in 2007 and clinical practice in 2008. Despite a lack of evidence supporting their effectiveness, their use continues to rise [3, 4].

Evidence from randomised controlled trials (RCTs) have found no benefits on hospitalisation outcomes for patients on CTOs, while evidence from case-control studies is mixed with some studies finding benefits in terms of readmission rates, duration of readmission and time to readmission, while others have found no or negative effects [5, 6]. Interpretation of the evidence base is constrained by the lack of longer-term follow-up studies (most are 12-months or less) and their focus on service use and clinical functioning outcomes.

Of the handful of longer-term follow-up studies, one remains un-published [1] while another has significant methodological limitations [7]. A third found no evidence that increased CTO compulsion reduced readmission rates or duration of readmission, nor increased time to readmission over 36-months follow-up [8]. The long-term effects of CTOs are largely unknown and more studies have been called for.

A further limitation of the CTO evidence base is the lack of attention given to patients' social situation and broader welfare [1, 9]. This omission has been increasingly called into question. For example, mental health professionals, carers and patient advocacy groups increasingly argue that what matters for patients is how they live – whether they can work, live independently and meet socially with friends – rather than the symptoms of the illness alone [10]. Churchill and colleagues point out that if CTOs are intended to improve outcomes for patients, then health service measures such as readmission, duration of stay, and contact with health services are all arguably secondary to this aim, and patient relevant outcomes should be given greater priority [1].

Social outcomes, in other words, are an important treatment goal for this patient group and should be assessed independent of clinical symptoms and service use [1, 11].

Aims

We conducted a follow-up study of the OCTET trial [12] using structured research interviews to test the association between the duration of CTO intervention and patients' social outcomes, measured in terms of social network size, objective social outcomes, capabilities, and health-related quality of life at 48-month follow-up. As a secondary objective we tested for differences in patients' social outcomes based on the randomised arms of the original trial. Associations between patients' social network size and demographic and clinical characteristics were also examined.

Methods

Sample

Patients in this study were a sub-sample of those recruited to the OCTET Trial (ISRCTN73110773) [8, 12]. Inclusion criteria for the OCTET Trial were: aged 18-65 years, primary diagnosis of psychotic illness, currently detained for inpatient treatment under the Mental Health Act, considered suitable for a CTO, and able to give informed consent. Following recruitment, these patients were randomised to either CTO or Control arm (patients in the Control arm were discharged from hospital via Section 17 leave of absence) and followed up for one year. (Section 17 leave allows a detained patient a temporary "leave of absence" from hospital, usually for a few hours or days, subject to recall.) For the present study, eligible patients were those from the trial who reached their 48-month follow-up date within a predefined period (January 2013 to December 2014) as part of a PhD programme of research, and lived across 14 National Health Service Trusts accessible by return day travel from Oxford. Patients who were psychiatric in-patients, too unwell (unable to consent or understand the purpose of the study), in prison, or unable to speak English were excluded.

Design and procedure

The 48-month follow-up study had a prospective observational design. Patient data were collected by the first author via structured research interview, using the instruments described below. Patients were contacted via their clinical team or, where they had been discharged from mental health services, directly via letter or telephone. Patients were seen within a window of 16-weeks on either side of their 48-month follow-up date. Interviews lasted approximately one-hour and patients were reimbursed with £25 for their time. Socio-demographic and clinical details were collected from

medical records. Ethical approval was granted by the Staffordshire NHS Research Ethics Committee [ref. 08/H1204/131] and all patients gave written informed consent prior to participation.

Instruments used

Social networks: *The Social Network Schedule (SNS)* [13] is a researcher-rated instrument used to describe the patients' social network. Patients are asked to list all social interactions (e.g. face-to-face conversations, telephone calls, letters, emails, online social networking) in the preceding month. A 'contact' is a person that the patient would consider part of their social network and to whom they have at least spoken, rather than someone that they only greet [14]. The instrument has been used in previous studies of patients with psychotic illnesses and is well validated.

Objective social outcomes: *The Objective Social Outcomes Index (SIX)* [15] captures information about an individual's social situation at the time of interview in four domains: employment (0 = none, 1 = voluntary/protected/sheltered, 2 = regular), living situation (0 = homeless, 1 = sheltered / supported, 2 = independent), partnership / family (0 = living alone, 1 = living with partner / family), and social contact in the last week (0 = not met a friend in the past week, 1 = met a friend in the past week). The instrument scores from 0 to 6 with higher scores indicating better outcomes.

Health-related quality of life: *EuroQol EQ-5D-3L* [16, 17] is a self-complete questionnaire that assesses health-related quality of life at the time of interview. The instrument has two components. The EQ-5D-3L is a five-dimension questionnaire (Mobility, Self-Care, Usual Activities, Pain and Discomfort, and Anxiety/Depression) with three levels of severity for each dimension (not present = 1, moderate disability = 2, severe disability = 3). Scores for the 3L can be converted to standardised 'utilities' based on UK population norms, ranging from 1 (11111) to -0.59 (33333), with 1 being the equivalent of perfect health and zero the equivalent of dead. The second component, the EQ Visual Analogue Scale (EQ VAS), is a 0 to 100 measure of current health status where 0 and 100 represent the worst and best imaginable health states respectively. The EQ-5D is a generic, multi-attribute instrument widely used in health economics research as the main outcome measure in cost-utility analyses [18].

Capabilities: *The Oxford Capability Questionnaire for Mental Health (OxCAP-MH)* [19, 20] is a 16-item self-complete or researcher/clinician-assisted questionnaire covering multiple capability domains (e.g. having access to interesting forms of activity or employment, having suitable accommodation, meeting socially with friends and relatives). The instrument is scored on a five-point Likert scale. Scores are summed and standardised on a 0 – 100 scale with higher scores indicating better capabilities. The instrument has good reliability and validity.

Psychiatric symptoms: *The Brief Psychiatric Rating Scale (BPRS)* [21, 22] is a clinician-rated measure of psychiatric symptom severity over the two weeks prior to interview. The instrument has 24 items, each of which are rated on a seven-point scale from not present (1) to extremely severe (7). It has a minimum score of 24 and maximum of 168, with higher scores indicating greater symptoms severity.

Overall functioning: *The Global Assessment of Functioning (GAF)* [23] is a clinician or researcher rated measure of overall functioning. It combines symptoms and social/occupational functioning into a single score from 0 to 100 with higher scores indicating superior functioning.

Perceived coercion: *The Admission Experience Survey (AES)*, adapted for out-patient use [24], is a 15-item self-complete or researcher-assisted scale scored on a 5-point Likert scale. The five-item *Perceived Coercion (AES-PC)* sub-scale captures patients' perceptions of influence and control in treatment decisions over the past six months. Scores range from 5 to 25 with higher scores indicating greater perceived coercion.

Data management and analysis

Following interview, questionnaires were scored and entered into a database. Descriptive statistics in this study used means (SD) for normally distributed data, medians [IQR] for non-normally distributed data, and number (%) for categorical data. We conducted a univariate analysis using t-tests for normally distributed data, Mann-Whitney U tests for non-normal data and Chi-square tests for categorical data. Pearson's correlations were used for normally distributed data and Spearman's rho for non-normal distributions. We used regression for the multivariate analyses. Models were determined by the distribution of outcome data and outcome type (count vs. continuous). We examined all model assumptions for both the univariate and multivariate analyses. Data were analysed using the Statistical Packages for the Social Sciences version 21 [25].

The duration of legal compulsion between baseline and 48-months follow-up was calculated for each patient as follows. The *duration of CTO* was the total number of days spent on a CTO (including multiple CTO periods where applicable). The *duration of involuntary hospitalisation* was the total number days detained under any other Section of the MHA (e.g. Section 2, 3, 4, 136, 37, 40/48) including, where applicable, the end of index admission after baseline measurement, and Section 17 leave. The *duration of any legal compulsion* was the sum of the duration of CTO and the duration of involuntary hospitalisation. For ease of interpretation, both the number of days of CTO and number of days of involuntary hospitalisation were converted into months by dividing the total number of days by 30.43 prior to analysis.

Negative binomial regression was used to test the association between the duration of CTO and social network size. The total number of contacts in patients' social network was entered as the main outcome and duration of CTO as the main predictor while controlling for age, gender, duration of illness, diagnosis (schizophrenia vs. other psychotic illness), illness severity (total days in hospital during follow-up) and perceived coercion at 48-month follow-up (in the context of compulsory interventions, perceived coercion has been shown to influence treatment outcomes [26]). Results for this model are presented as Incident Rate Ratios (IRR) with 95% confidence intervals (CI). This procedure was followed for the SIX, EQ-5D-3L, and OxCAP-MH using linear regression. Results are presented as unstandardised and standardised beta coefficients. Because mood has been strongly linked to quality of life outcomes [27, 28] we controlled for depression at follow-up in the EQ-5D-3L and OxCAP-MH regression analyses using the BPRS depression dimension.

Sensitivity analyses

CTOs are community-based intervention designed to support the treatment and care of patients living in the community, so any treatment effects are likely to occur in the community and ought to be measured there. We therefore conducted a sensitivity analysis in which the main predictor (duration of CTO) was calculated as a proportion of days spent in the community during the 48-month follow-up. This was calculated as follows: $CTO / (VOL + CTO) \times (VOL + ALL)$, where CTO is the duration of CTO; VOL is the total days voluntary; and ALL is duration of legal compulsion (CTO and hospital) (sensitivity analysis 1).

Due to missing data, baseline SNS, SIX, EQ-5D-3L and OxCAP-MH scores could not be controlled for in the regression analyses without a reduction in sample size and therefore loss of power. To check whether baseline scores influenced outcomes we conducted a second sensitivity analysis in which baseline social outcome scores were included in the regression analyses, where available (there were no baseline SNS data) (sensitivity analysis 2).

Finally, not all patients in our sample were placed on a CTO during follow-up. To test whether the inclusion of patients never on a CTO altered results, we repeated the regression analyses including only those patients who were subject to a CTO ≥ 1 day during follow-up (n=70) (sensitivity analysis 3).

Results

Participant flow and follow-up

Of the 336 patients randomised to the OCTET RCT, three were excluded (one withdrew and two were ineligible). Of the remaining 333, 210 patients were eligible for the 48-months follow-up, of which 115 patients were interviewed at 48-months. Of the 210 patients eligible for follow-up but not seen, 38 (18%) refused, 14 (7%) were lost to follow-up (two had moved abroad), 14 (7%) were deceased, 26 (12%) were psychiatric inpatients and/or too unwell, 2 (1%) were in prison, and 1 (<1%) did not speak English. Of the patients who were interviewed, 1 (<1%) was excluded because she refused to answer the interview questions, leaving 114 in the study. All analyses were conducted on this sample.

The mean number of months between baseline and the 48-months follow-up interview was 48.2 (SD = 1.4) for the full sample. For the trial arms it was 48.3 (SD = 1.5) in the CTO arm and 48.2 (SD = 1.6) in the Control arm.

We conducted a complete case analysis for the regression models so cases that did not have data for all covariates were dropped. Of the 114 patients, nine were removed because of missing data for the AES-PC (the instrument could not be completed by patients who had been discharged from mental health services since it asks about experiences of pressure/coercion in relation to the patient's care-coordinator and community mental health team in the last six months). One further patient was removed because their duration of illness was unknown. The regression analyses were consequently conducted on a sample of 104 patients. However, maintaining the full sample size (n = 114) by excluding the AES-PC from the regression analyses did not alter the significance of any of the outcomes.

The socio-demographic and clinical characteristics of the original RCT sample (n = 336), patients identified for follow-up (n = 210), and patients seen and included in the final analysis (n = 114), did not significantly differ except in terms of ethnic composition and employment. Among patients followed up, there were significantly fewer White British participants (49%) compared with the original sample (61%). They were also more likely to be employed, which is not surprising since all participants were in hospital detention at baseline (**Table 1**).

Baseline characteristics

Socio-demographic and clinical characteristics of the sample are presented in **Table 1**. Of the 114 patients, 76 (67%) were male, 56 (49%) were White British, 37 (33%) were Black, 15 (13%) were Asian, and 6 (5%) were 'Mixed/Other'. The majority of patients (86, 75%) were born in the UK and were unemployed (99%). Patients had a mean of 11.8 years of education (12 years education is mandatory in the UK). Only 11 patients (10%) were married or cohabiting, though the majority were

living independently (76%). Patients had a mean age of 39.5 years and had been unwell for almost 15 years. The majority of patients had a diagnosis of schizophrenia, schizotypal or delusional disorder (83%), while 20 (17%) had diagnoses of other psychotic illnesses including bipolar disorder. The characteristics of this sample closely match those of other CTO studies in the UK and internationally [1, 29, 30].

TABLE 1

Hospitalisation and compulsory interventions during follow-up

Interventions and changes in legal status during the 48-month follow-up are presented in **Table 2**. Between baseline and follow-up, 103 patients (90%) spent at least one night in hospital (including index admission), a mean of 5.8 (SD = 7.3) months in hospital during follow-up. Altogether, 55 patients (48%) were readmitted to hospital at least once, with a median of 1.0 [IQR = 0 – 1, range 0 – 11] admissions. 113 (99%) patients had spent time detained under the Mental Health Act during the 48-month follow-up (including index admission and time spent on Section 17 leave, but not on CTOs), experiencing a median of 4 months [IQR = 2 – 8, range = 0 – 39] of involuntary hospitalisation.

During follow-up, 70 (61%) patients had been subjected to a CTO intervention, 45 in the CTO arm and 25 in the Control arm. 45 (79%) of patients in the CTO arm had been subjected to a CTO – this was due to protocol violations in the OCTET RCT in which 42 patients who were randomised to the CTO arm were never placed on a CTO. The median [IQR] number of months spent on a CTO for the full sample was 5 [0 – 20] months: 7 [2 – 27] for the CTO arm and 0 [0 – 10] for the Control arm. This difference was statistically significant ($p < .001$). There was also a significant between-group difference in the median number of months that patients were subjected to any legal compulsion during follow-up (18 vs. 9) ($p < .01$).

Of the 70 patients placed on a CTO at any point during the 48-months follow-up, 39 (56%) were readmitted at least once, compared with 16 (36%) of the 44 patients who were never subject to a CTO ($p = .03$). These 70 patients spent a median [IQR] of 5 [2 – 6] months in hospital compared with 2 [3 – 6] for the 44 patients who were never subject to a CTO, and, compared to the 44, also spent more time in hospital involuntarily: 5 [2 – 9] compared with 3 [1 – 6] ($p = .043$).

TABLE 2

Patients' social, clinical and functional status at baseline and 48-months follow-up is presented in **Table 3**. For the whole sample, there was a statistically significant improvement in patients' overall functioning (38.37 vs. 44.75), a non-significant increase in objective social outcomes (2.60 vs. 2.80), and no change in illness severity (38.34 vs. 37.90) and capabilities (59.15 vs. 59.68). In contrast, there was a statistically significant decline in EQ-5D-3L utility (0.76 vs. 0.69) and VAS scores (68.14 vs. 64.17, $p = .138$), though the latter was not significant.

TABLE 3

Social network characteristics

The social network characteristics at 48-month follow-up are presented in **Table 4**. Patients had mean of 10.2 (SD = 5.9) contacts in their social network with whom they had interacted during the past month. Relatives made up 42% of patients' social networks. The majority of contacts were seen either at home (4.4, SD = 3.5) or in non-healthcare settings (5.2, SD = 5.1). Most were seen weekly (3.0, SD = 2.8) followed by daily (2.6, SD = 2.8). Patients reported a mean of 7.7 (SD = 5.3) contacts that they would miss were they no longer able to see them. Patients had a mean of 3.8 (SD = 4.3) friends (this figure includes acquaintances, neighbours and work colleagues but not family members) and 5 (SD = 3.6) confidants in their social networks.

TABLE 4

The total number of contacts in patients' social networks was significantly positively associated with overall functioning measured by the GAF ($r = 0.50$, $p < .001$) and a significant negatively associated with symptom severity measured by the BPRS ($r = -0.28$, $p < .001$). Patients aged less than 40 years had significantly more contacts in their social network compared to those aged 40 and older (11.3 vs. 9.0, $p < 0.05$). There were no significant between-group differences for gender ($p = 0.79$) or ethnicity ($p = 0.81$).

CTO duration and social outcomes

There were no significant associations between the duration of the CTO intervention over the course of the study and patients' social network size, objective social outcomes, health-related quality of life, and capabilities at follow-up (**Table 5**).

TABLE 5

The three sensitivity analyses did not alter this outcome. In the first sensitivity analysis, the duration of CTO follow-up was calculated as proportion of months spent in the community: social network size (IRR = 0.996, $p = 0.574$, 95% CI = 0.982 – 1.010), objective social outcomes ($B = -0.002$, $p = .799$, 95% CI = -0.017 – 0.013), health-related quality of life ($B = 0.001$, $p = .660$, 95% CI = -0.003 – 0.005) and capabilities ($B = 0.051$, $p = .299$, 95% CI = -0.046 – 0.149).

Inclusion of baseline scores (sensitivity analysis 2) did not alter the significance of the association between total months of CTO intervention and objective social outcome scores ($B = -0.008$, $p = .323$, 95% CI = -0.025 – 0.008, $n = 100$), health-related quality of life ($B = 0.001$, $p = .973$, 95% CI = -0.004 – 0.004, $n = 89$) capabilities at follow-up ($B = -0.015$, $p = .829$, 95% CI = -0.152 – 0.122, $n = 66$).

In the third sensitivity analysis, only patients subject to CTO were included in the regression analysis but again no significant association were found between CTO duration and social outcomes at follow-up: social network size (IRR = 0.997, $p = .776$, 95% CI = 0.976 – 1.018), objective social outcomes ($B = -0.008$, $p = .464$, 95% CI = -0.014 – 0.029), health-related quality of life ($B = 0.002$, $p = .557$, 95% CI = -0.007 – 0.004) and capabilities ($B = 0.108$, $p = .185$, 95% CI = -0.053 – 0.269).

When social outcomes were compared by arm of randomisation (CTO vs. Control), there were no statistically significant differences in patients' mean social network size (10.4 vs. 10.0), objective social outcomes (2.81 vs. 2.75), health-related quality of life (0.73 vs. 0.67), and capabilities (59.8 vs. 58.2) at 48-months.

Discussion

This study is one of few to describe the social situation of a well-defined sub-group of high need patients eligible for treatment under the CTO regime. We tested the association between CTO duration and patients' social outcomes at 48-months follow-up, finding no significant association for social network size, objective social outcomes, health-related quality of life and capabilities.

Comparison of social outcomes based on the randomised arms of the OCTET Trial revealed no significant differences, though this was expected since group allocation was not maintained after the first year of the Trial. The findings suggest that a longer duration of CTO does not correspond with measurable improvements in patients' longer-term social situation, despite the curtailment of their personal freedoms.

Studies examining the effects of CTOs on patients' social outcomes are scarce and findings are mixed. The most comprehensive review of CTO literature to date found no clear evidence that CTOs have significant effects on social outcomes including social functioning, offences resulting in arrest,

homelessness, general mental state, psychopathology, quality of life, carer satisfaction, or perceived coercion [1]. While some studies have reported benefits for patients on CTOs, such as lower levels of victimisation [31], others have found that patients on CTOs did no better in terms of objective social outcomes, global functioning, health-related quality of life, attitudes to treatment, and perceived coercion, when compared with voluntary patients [32]. Studies assessing the number of weekly social interactions have found no significant benefits for patients on CTOs when compared with those receiving care voluntarily [33–35].

The social networks of patients in this study were small: a mean of 10.2 individuals. This is remarkably close to the figure of 11.7 reported in a recent systematic review of the social networks of patients with psychotic illnesses [36]. We found that relatives made up 42% of these contacts, very close to the systematic review figure of 43.1%. Similarly, patients in our study had a mean of 3.8 friends in their social networks – this figure includes acquaintances, neighbours and work colleagues but not family members – only slightly more than the figure of 3.4 reported in the review. Both figures are small when compared with figures reported for the general population in the UK: 10.6 for men and 7.6 for women [36].

There were no differences in patients' social network characteristics when stratified by gender and ethnicity (white vs. other), although patients under 40 years had significantly more contacts when compared to patients aged 40 and older. There was a significant association between network size and both overall functioning and symptoms, consistent with numerous previous studies of this patient group [36]. Overall, the social network characteristics of patients in our study are remarkably consistent with those reported in previous studies of social networks of people with psychotic illnesses and further supports the reliability and validity of the SNS for measuring social networks in this population.

Changes in patients' social, clinical and functional status between baseline and follow-up were mixed. There was a statistically significant increase in overall functioning and a non-significant increase in objective social outcomes – this is not surprising since patients were in hospital at baseline but living in the community, mostly in independent accommodation, at follow-up. Going against this trend, however, was patients' health-related quality of life which was significantly lower at follow-up. This is surprising. One explanation is that patients living in the community had less access to health resources and support compared with baseline when they were receiving inpatient care, which may have contributed to a perception of greater 'health vulnerability'. It is also possible that patients were cautious in reporting their health-related quality of life out of concerns that any evidence of them 'doing well' could be used to justify withdrawal of their disability benefits.

Concerns have been raised about the reliability of the EQ-5D particularly its sensitivity when applied to psychotic illnesses [37] and the decline may also reflect a degree of measurement error.

Limitations

Long-term follow-up studies of patients with psychotic illnesses are costly and demanding to implement and limitations are inevitable. One such limitation is the missing data for the baseline social outcome measures. Without these, we were unable to control for patients' baseline social network size, and also had some loss of power in the regression analyses used to analyse the other social outcomes. Nevertheless, we believe it is unlikely that this altered the results of the study since no relationship was found between the duration of CTO intervention and any of the social outcomes in the unadjusted regression models or in the sensitivity analyses. Concerning the comparison of social outcomes by OCTET arm of randomisation, numerous events may have intervened to alter outcomes during follow-up and this limits interpretation of this result.

Patients in this follow-up study were selected on the basis that they were living in the community in geographically accessible locations and eligible for follow-up within a pre-defined period. This may have introduced a selection bias. Compared to patients in the OCTET Trial, this study had more patients from minority ethnic backgrounds and they were more likely to be employed. The differences in ethnicity are likely due to a larger portion of the follow-up being conducted in urban areas where higher concentrations of people from ethnic minority backgrounds are known to live. Differences in employment may be explained by the study's focus on community-based patients (whereas at baseline all were detained in hospital and therefore unable to work), who are likely to show better clinical and social functioning (as well as employment rates) compared with inpatients. These differences could limit the generalizability of the study findings.

Summary

This is the first study to test the relationship between time spent on CTOs and long-term social outcomes among patients with psychotic illnesses resident in the community. CTO duration was not associated with changes in any of the outcomes assessed, suggesting that CTOs offer few benefits to patients in the longer term. Together with other recent findings, this study adds further weight to claims that the use of CTOs in their current form needs to be revised. More broadly, we argue that social outcomes occupy an important place in the evaluation of interventions for patients with psychotic illnesses and should be given greater priority in future studies of CTO effectiveness.

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Table 1 Socio-demographic and clinical characteristics for OCTET Trial and 48-months follow-up

	OCTET Trial (Baseline)				48-month follow-up				
	Missing data		Randomised		Eligible		Interviewed		
	n = 336		n = 336		n = 210		n = 114		
	N	(%)	N,	(%),	N,	(%),	N,	(%),	
			Mean or	(SD),	Mean or	(SD),	Mean or	(SD) or	
			Median	[IQR]	Median	[IQR]	Median	[IQR]	
Demographics									
Age	0	(0%)	39.7	(11.4)	40.2	(11.5)	39.5	(11.1)	
Sex	0	(0%)							
Male			225	(67%)	137	(65%)	76	(67%)	
Female			111	(33%)	73	(35%)	38	(33%)	
Years of education	4	(1%)	11.9	(1.9)	12.0	(1.9)	11.8	(1.7)	
Ethnic origin	0	(0%)							
White British			204	(61%)*	99	(47%)	56	(49%)*	
Black			77	(23%)	71	(34%)	37	(33%)	
Asian			29	(9%)	24	(11%)	15	(13%)	
Mixed and Other			23	(7%)	16	(8%)	6	(5%)	
Born in the UK	1	(<1%)	259	(77%)	149	(71%)	86	(75%)	
Employment and living situation									
Regular part- or full-time employment	1	(<1%)	2	(<1%)	2	(1%)	7	(6%)	
Married/co-habiting	2	(<1%)	29	(9%)	19	(9%)	11	(10%)	
Independent accommodation	2	(<1%)	241	(73%)	154	(74%)	87	(76%)	
Living alone/homeless	18	(5%)	148	(44%)	93	(44%)	53	(47%)	
Clinical status									
Schizophrenia	0	(0%)	286	(85%)	180	(86%)	94	(83%)	
Brief Psychiatric Rating Scale	22	(7%)	38.8	(11.1)	38	(11.4)	38.3	(12.1)	
Global Assessment of Functioning	25	(7%)	38.9	(9.8)	39	(9.6)	38.4	(9.7)	
Clinical history									
Duration of illness (years)	9	(3%)	14.4	(10.4)	14.5	(10.6)	14.3	(10.8)	

No. of past psychiatric hospital admissions	22	(7%)	5	[3-9]	5	[3-8]	5	[3-9]
No. of months of past psychiatric hospitalisation	58	(17%)	15	[7-30]	14	[6-30]	14	[6-30]
No. of past involuntary hospital admissions	33	(10%)	4	[2-7]	4	[2-7]	4	[2-7]

** Significant at the .05 level; Note: percentages may not sum to 100 due to rounding*

Table 2 Interventions and duration of compulsion during 48-month follow-up

	Total sample				CTO				Control			
	n = 114				n = 57				n = 57			
	N or Mean	(%) (SD)	Median	[IQR]	N or Mean	(%) (SD)	Median	[IQR]	N or Mean	(%) (SD)	Median	[IQR]
No. of patients readmitted	55	(48%)	-	-	30	(53%)	-	-	25	(44%)	-	-
No. of readmissions	1.0	(1.7)	0	[0-1]	1.3	(2.1)	1	[0-2]	0.8	(1.1)	0	[0-1]
No. of months in hospital ¹	5.8	(7.3)	4	[1-6]	5.5	(6.1)	4	[1-7]	6.0	(8.4)	4	[1-6]
No. of patients subject to CTO	70	(61%)	-	-	45	(79%) ²	-	-	25	(44%)	-	-
Duration of CTO (months) (n = 70) ³	10.5	(13.2)	5	[0-20]	14.8	(14.4)	7**	[2-27]	6.3	(10.4)	0**	[0-10]
Duration of involuntary hospitalisation (months)	6.4	(7.1)	4	[2-8]	6.0	(6.2)	4	[2-8]	6.7	(7.9)	4	[2-9]
Duration of any legal compulsion (months)	16.9	(14.6)	12	[5-29]	20.8	(15.3)	18**	[6-36]	13.0	(12.7)	9**	[3-19]

¹ Includes index admission; ² Due to protocol violations in the OCTET Trial, 42 patients randomised to the CTO arm were not placed on a CTO; ³ Multiple CTO periods included; ** Significant at the .01 level

Table 3 Social, clinical and functional status at baseline and 48-months follow-up

Social outcome	Baseline		48-months		n	p
	Mean	(SD)	Mean	(SD)		
Objective social outcomes (SIX)	2.60	(1.06)	2.80	(1.17)	110	.099
Health-related quality of life (EQ-5D-3L)	0.76	(0.26)	0.69	(0.31)	99	.045
Capabilities (OxCAP-MH)	59.15	(9.61)	59.68	(8.49)	71	.678
Illness severity (BPRS)	38.31	(12.09)	37.90	(9.65)	109	.720
Overall functioning (GAF)	38.37	(9.67)	44.75	(11.31)	109	.001

Table 4 Social network characteristics at 48-month follow-up (n = 114)

	Mean	(SD)	Median	[IQR]	(range)
Total					
Total number of contacts in social network	10.2	(5.9)	9	[6-19]	(1 – 29)
Gender of contact					
Male	5.5	(3.9)	5	[3-8]	(0 – 19)
Female	4.7	(3.6)	4	[2-6]	(0 – 23)
Designation of contact					
Relative	4.1	(3.5)	3	[2-9]	(0 – 15)
Health professionals/accommodation staff	1.5	(1.7)	1	[0-2]	(0 – 10)
Hospital and community patients	0.8	(1.4)	0	[0-1]	(0 – 1)
Friend/acquaintance/neighbour/workmate	3.8	(4.3)	2	[1-6]	(0 – 19)
Location of interaction					
Home	4.4	(3.5)	4	[2-6]	(0 – 22)
Healthcare setting	0.5	(1.3)	0	[0-1]	(0 – 9)
Non-healthcare setting (anywhere else)	5.2	(5.1)	4	[1-8]	(0 – 25)
Frequency of interaction					
Seen daily (up to 4 times a week)	2.6	(2.8)	2	[1-4]	(0 – 14)
Seen weekly (up to 3 times a week)	3.0	(2.8)	2	[1-4]	(0 – 1)
Seen monthly to fortnightly	2.2	(2.4)	2	[0-3]	(0 – 11)
Less than monthly but seen in the last month	1.3	(1.7)	1	[0-2]	(0 – 7)
Telephone/letter/email/online contact only	1.1	(1.8)	0	[0-2]	(0 – 10)
Intimacy of relationship					
Contacts that would be missed if not seen	7.7	(5.3)	6	[4-10]	(0 – 28)
Confidants	5.0	(3.6)	5	[2-7]	(0 – 15)

Table 5 Regression analyses showing the association between the duration of CTO and social outcomes (n = 104)

Predictor ¹	IRR / B	Beta	p	95% confidence intervals	
				Lower	Upper
<i>Duration of CTO</i>					
Number of contacts in social network (SNS)	0.996	-	.627	0.980	1.012
Objective social outcomes (SIX)	-0.003	-0.031	.771	-0.020	0.015
Health-related quality of life (EQ-5D utilities) ²	0.001	0.045	.765	-0.004	0.005
Capabilities (OxCAP-MH) ²	0.046	0.074	.409	-0.065	0.157

¹ Total duration of CTO, controlling for age, gender, duration of illness, diagnosis, perceived coercion, depression, and illness severity; ² Also controlling for depression at follow-up; IRR = incident rate ratio; B = unstandardised beta coefficient; Beta = standardised beta coefficient