ORIGINAL PAPER

A new inner-city specialist programme reduces readmission rates in frequently admitted patients with bipolar disorder

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Aims and method   The OPTIMA mood disorders service is a newly established specialist programme for people with bipolar disorder requiring frequent admissions. This audit compared data on hospital admissions and home treatment team (HTT) spells in patients before entry to and after discharge from the core programme. We included patients admitted between April 2015 and March 2017 who were subsequently discharged. Basic demographic data and numbers of admissions and HTT spells three years before and after discharge were collected and analysed.

Results   Thirty patients who completed the programme were included in the analyses. The median monthly rate of hospital admissions after OPTIMA was significantly reduced compared with the rate prior to the programme. HTT utilisation was numerically reduced, but this difference was not statistically significant.

Clinical implications   These results highlight the effectiveness and importance of individually tailored, specialist care for patients with bipolar disorder following discharge from hospital.

Declaration of interest   None.

Keywords   Specialist service development; audit; bipolar affective disorder; functional recovery; recurrence prevention.

The period immediately following hospital admission for mania or bipolar depression is an important opportunity to optimise treatment and to prevent episode recurrence and readmission.[1] Studies show that this period is one of high risk of readmission and episode recurrence.[2–4] It is also a period of high suicide risk.[5] The OPTIMA mood disorders service was established in 2015 in the South London and Maudsley (SLaM) NHS Foundation Trust.[6] OPTIMA's core programme aims to consolidate recovery for people with bipolar disorder who have recently required a hospital admission or home treatment team (HTT) care for an episode of mania or depression. Importantly, the core programme focuses particularly on those who have required frequent hospital admissions. In a preparatory audit of admissions for bipolar disorder in the Trust, over a three-year period, there were approximately 500 admissions per year for bipolar disorder. Two-thirds of these were readmissions, emphasising the need for better preventive strategies. Approximately 150 people were admitted more than once a year: this group accounted for a quarter of the total number of admissions for patients in this diagnostic group.

The OPTIMA core programme offers an individually tailored treatment, comprising ongoing psychiatric assessment and review, the prescribing of psychotropic medication, specialist nursing, occupational therapy and individual psychoeducation.

This preliminary audit assessed the effect of this programme on readmission rates by comparing median admission rates before and after engagement with OPTIMA. A similar comparison was made with rates of HTT episodes.

Method

Approval for this audit was obtained from the SLaM Mood, Anxiety and Personality Clinical Academic Group Governance Committee. The audit focused on patients who had been admitted to the OPTIMA core programme between April 2015 and March 2017.

The core programme began with an assessment appointment with a consultant psychiatrist or senior trainee, and a key worker (a senior nurse or an occupational therapist). When the patient entered the programme, they were offered a period of engagement in which goals were agreed. Psychiatric review and medication changes were made to address ongoing affective episodes or subsyndromal

symptoms. 'Key working' was offered: this was an individually tailored psychoeducation programme which aimed to reinforce prevention strategies. It included sensitive work, such as the identification of past episode triggers and early warning signs of mania and depression. Self-management skills, early intervention strategies and crisis planning were taught to prevent full episode recurrence.[7]

The programme also offered specialist nursing interventions and occupational therapy. Appointments were offered at times and at a frequency convenient to the patient to encourage attendance. Initially, it was planned that the core programme should last 12 weeks, followed by less frequent contacts prior to discharge to the patient's community team. However, in practice, a more flexible approach was used, and the duration of the core programme was adapted in each case to allow for individual variation in the time needed to engage patients and to address ongoing affective symptoms.

Basic demographic data were collected. The number of hospital admissions and HTT episodes in the three-year period before entering OPTIMA were extracted from electronic health records. Similarly, the number of hospital admissions and the number of HTT episodes in the (shorter) period following discharge were determined. Monthly rates of admission and HTT episodes in the 36 months before OPTIMA were calculated. For the period following discharge from OPTIMA, rates of admission and HTT contacts were calculated by dividing the number of admissions/HTT contacts by the number of months since discharge from the programme. Descriptive statistical analyses were used to characterise the audit sample. A Wilcoxon signed-rank test (Shapiro–Wilk, $P = 0.001$) was used to conduct comparisons of pre- and post-OPTIMA admission and HTT rates.

Results

At the time of this audit, 30 people had engaged with and had been discharged from the OPTIMA core programme; a further 22 patients remained in the programme. Of the group of 30 discharged patients, 20 were female and 10 were male. The median age was 40.5 years, with an interquartile range (IQR) of 25.

The median number of months since discharge from OPTIMA was 9.5 (IQR 8). Eighteen people did not complete the whole programme for the following reasons: recurrence of illness ($n = 4$), personal issues ($n = 6$) and lack of engagement ($n = 8$). For purposes of our analysis, these 18 patients were included in the analyses as they received at least one therapeutic intervention during their stay in the programme.

The median monthly rate of hospital admissions after OPTIMA was 0.00 (IQR 0.00), which was significantly different from the median monthly rate in the three years prior to OPTIMA (0.04; IQR 0.06; Wilcoxon signed-rank test $Z = 3.1$; $P = 0.002$). The post-OPTIMA median monthly rate of HTT episodes (0.00; IQR 0.02) was numerically reduced compared with the rate prior to OPTIMA (0.03; IQR 0.06), but this difference did not reach statistical significance (Wilcoxon signed-rank test $Z = -1.5$, $P = 0.136$).

Discussion

These results provide preliminary evidence of the effectiveness of the OPTIMA core programme in reducing hospital readmissions in a group of frequently admitted patients from an inner-city catchment area.

There was no statistical difference in HTT spells of care required before and after the programme. This may reflect the limited sample size and the short follow-up period of this early audit. However, it is possible that when OPTIMA 'graduates' do suffer recurrence, symptoms are recognised earlier, and patients are better able to use home treatment, and so hospital admissions are avoided.

The role of specialised programmes has been debated in recent years. Do the long-term benefits of specialised services justify the resources they require and their costs[8]? A growing body of evidence supports the need for and the effectiveness of specialist services, particularly in the case of complex and disabling illnesses, such as bipolar disorder.[9] In a recent study, Kessing *et al*[1] randomised 158 recently discharged patients with bipolar disorder to the treatment arms of a specialised bipolar clinic or standard care. The specialised intervention consisted of a two-year comprehensive programme that combined individual and group treatments, including group-based psychoeducation, provided by psychiatrists, psychologists, nurses and social workers with relevant training and experience in the treatment of bipolar disorder. Over a period of almost six years, a significant reduction in the rates of readmission was found in the group receiving specialist care. Importantly, there was a significant associated reduction in the financial costs to the care provider, as well as higher patient satisfaction rates. The OPTIMA mood disorders programme used a similar approach, but there were several important differences. First, the OPTIMA mood disorders service provided intensive clinical care to recently discharged patients at any stage in their bipolar illness, but selected them on the frequency of their admissions; the Kessing study focused on those early in their bipolar course. Second, the OPTIMA programme was designed to recruit the Trust's most frequently admitted patients to our core programme. Third, patients on our core programme were often symptomatic and could not attend our structured group psychoeducation programme; in these cases, individual psychoeducation was provided instead.

Specialised programmes such as OPTIMA provide opportunities for education and research.[8,10] The South London and Maudsley NHS Foundation Trust comprises a number of clinical academic groups which aim to facilitate the provision of evidence-based treatment, research and training in its clinical services. The OPTIMA programme hosts students, postgraduate students and trainees who wish to learn more about bipolar disorder.

Interpretation of the results of this early audit of a new service is subject to several limitations. The number of patients who completed the programme was small, and the period since discharge is short. Our results are based on an observational design with intra-individual comparisons: there was no control group to compare effects with standard treatment offered by the Trust. Despite these limitations, our initial findings support the importance of frequent

specialist post-episode psychiatric review and maintenance phase interventions to stabilise bipolar disorder in frequently admitted patients. Future work will include the expansion of this model of care in the development of an OPTIMA ward liaison service to improve continuity of care from the in-patient to the community setting, and recruitment to the OPTIMA core programme.

Funding

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References

1 Kessing LV, Hansen HV, Hvenegaard A, Christensen EM, Dam H, Gluud C, et al. Treatment in a specialised out-patient mood disorder clinic v. standard out-patient treatment in the early course of bipolar disorder: randomised clinical trial. *Br J Psychiatry* 2013; **202**: 212–9.

2 Strakowski SM, Keck PE, McElroy SL, West SA, Sax KW, Hawkins JM, et al. Twelve-month outcome after a first hospitalization for affective psychosis. *Arch Gen Psychiatry* 1998; **55**: 49–55.

3 Hamilton JE, Passos IC, de Azevedo Cardoso T, Jansen K, Allen M, Begley CE, et al. Predictors of psychiatric readmission among patients with bipolar disorder at an academic safety-net hospital. *Aust NZ J Psychiatry* 2016; **50**: 584–93.

4 Keck PE, McElroy SL, Strakowski SM, West SA, Sax KW, Hawkins JM, et al. 12-month outcome of patients with bipolar disorder following hospitalization for a manic or mixed episode. *Focus* 2003; **1**: 44–52.

5 Appleby L, Kapur N, Shaw J, Hunt I, Flynn S, Ibrahim S, et al. *The National Confidential Inquiry into Suicide and Homicide by People with Mental Illness*. Making Mental Health Care Safer: Annual Report and 20-Year Review. University of Manchester, 2016.

6 Macritchie K, Dewing B, Mantingh T, Young AH. The OPTIMA mood disorders programme: optimising treatment for people with bipolar disorder in South London. Poster presented at International Society for Affective Disorders, 2016.

7 Morriss RK, Faizal MA, Jones AP, Williamson PR, Bolton C, McCarthy JP. Interventions for helping people recognise early signs of recurrence in bipolar disorder. *Cochrane Database Syst Rev* 2007; **1**: CD004854.

8 Vieta E. Bipolar units and programmes: are they really needed? *World Psychiatry* 2011; **10**: 152.

9 Vieta E. Pros and cons of specialised care in bipolar disorder: an international perspective. *Br J Psychiatry* 2013; **202**: 170–1.

10 Henry C, Etain B, Mathieu F, Raust A, Vibert J-F, Scott J, et al. A French network of bipolar expert centres: a model to close the gap between evidence-based medicine and routine practice. *J Affect Disord* 2011; **131**: 358–63.