

Telephone case management reduces both distress and psychiatric hospitalization

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Objective: The aim of the present study was to improve the health care of people repeatedly admitted to private hospitals.

Method: An open trial in which frequent utilizers were offered telephone case management over a 12 month period, was conducted.

Results: An average of 24 phone calls were made to the 99 who remained in the programme for the 12 months. Psychological distress declined significantly over the 12 months, and the number of days in hospital was reduced compared to the previous year. The cost benefit ratio was 1:8.4.

Conclusions: The changes in well-being and hospitalization over the 12 months were substantial and are unlikely to be due to regression to the mean. A prospective randomized controlled trial comparing telephone case management with treatment as usual is indicated.

Key words: case management, hospitalization, psychological distress, telephone care.

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Many mental disorders are chronic, and such patients will require long periods of treatment, predominantly in the community. In some patients this ambulatory care is punctuated by hospital admissions. Frequent admissions, although beneficial in the short term, may be deleterious in the longer term because they reduce the expectation that the patients will be able to cope, both by the patient themselves and by their family. Case management, the application of proactive care by health professionals, is the usual response to high service-utilizing patients in the public sector. In the private sector, when each person is under the care of a psychiatrist in private practice, such case management is rare.

Taylor *et al.* examined a telephone case management programme implemented by a non-profit US

health maintenance organization that aimed to reduce rehospitalization of members with a history of multiple psychiatric admissions [1]. They demonstrated that the telephone programme reduced hospital admissions and the average length of hospital stay. The cost saving of \$US3301 per person was due to the reduced time in hospital.

The Hospitals Contribution Fund (HCF) in Sydney was also concerned about people who had had recurrent admissions to private hospitals over the preceding 24 months, and developed a quality assurance Helping Hands programme to provide proactive support over the telephone in the hope of improving the well-being of their members. The Fund collected data on the proportion of eligible members enrolling and staying with the programme for 12 months, changes in distress over that period and hospital use in that year as compared to use in the previous year. The authors had no input to the design of the study but, aware that it had been done, agreed to analyse and write up the data for publication. The quality assurance nature of the study by the Fund did not require ethics approval. No ethics

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approval for analysis and write up was able to be obtained from St Vincent's Human Research Ethics Committee (of which GA is a member) but the authors believe that publication of the results is in the public interest. The authors had no access to identified data, only to de-identified data on hospitalization and distress. The authors have no reason to doubt the veracity of the data.

Methods

Current members of the HCF aged between 19 and 84 who had had more than three psychiatric admissions or more than 15 day-only psychiatric admissions in the previous 24 months were approached by the Fund. Patients with dementia or anorexia were excluded.

Eligible participants received a letter from the HCF inviting them to participate in a 12 month programme whereby members could learn to understand and manage their 'mental health condition'. The letter informed them that they would be phoned by a specially trained mental health professional from McKesson Asia-Pacific, a health-care agency acting on behalf of the HCF. The mental health professionals were supervised by a consultant psychiatrist. Participants were informed how to opt out of the programme should they not wish to participate and were informed that if they participated they would need to give verbal permission for their private psychiatrist to be contacted should the need arise.

The introductory call described the programme, confirmed that the member wished to enrol, and confirmed consent for their psychiatrist to be contacted. The mental health professional introduced themselves as the person's case manager during the programme. A telephone assessment was scheduled for a convenient time in which the clinical history, current treatment, identification of risk factors for relapse, and patient knowledge of strategies for recovery were explored. Each patient completed the Kessler short screening scale (K10), a widely used measure of psychological distress [2]. Patients were sent a self-care booklet that helped them understand and document their mental illness, stressed the importance of medication, and of self-care in respect to sleep, exercise, substance use, stress management and social contacts and interests. It also included a proforma on which a personal relapse prevention plan could be documented. Regular diary entries and measurement of distress using the K10 were encouraged.

Patients were given a severity rating at that first assessment interview and the more severe patients were scheduled to receive more support calls from their case manager, on a daily basis if need be during an acute phase. Crisis support was available on demand via a 1300 number on a 24/7 basis, when the professional answering would have access to the patient's relapse prevention plan. Support was continued for 12 months from the date of enrolment. At the final call another K10 was completed and the patient's satisfaction with the programme was assessed.

This was a quality assurance study that compared hospitalization in the year preceding enrolment with that in the year subsequent to enrolment in patients who remained enrolled for the 12 months.

The mean difference in hospital days was expressed in days and in associated costs. The mean K10 score of the group at enrolment was compared with the K10 score 12 months later.

Results

Four hundred and eleven people were eligible for the programme, 407 were able to be contacted and 174 enrolled in the programme. Ninety-nine stayed in the programme for the 12 months. Two-thirds of those who completed the programme were female and half were aged between 36 and 55. At their last admission the commoner diagnoses were mood disorder (63%) and substance use disorder (23%). At enrolment the mean K10 score obtained from 96 of the 99 completers was 25.8, consistent with a moderate mental disorder, and one-third had scores in the severe range of ≥ 30 .

The care managers averaged 21 phone calls to each patient (range = 8-60) over the 12 months. The mean duration of successful out calls was 36 min. Patients made 343 phone calls (3.5 per patient) to the agency care managers, and one-fifth of those calls were made to the emergency crisis number.

The mean K10 score at the final phone call was 21.3 (SD = 9.0), a significant improvement ($F = 26.8, p < 0.001$) over the value 12 months earlier. The number of people in the severe range was halved. The distribution of K10 scores at both assessments was skewed and a square root transformation reduced the skew. The results did not change. There were no significant interactions between K10 scores and gender or age. A satisfaction survey was administered to 74 of 99 completers and the median respondent agreed that my health fund 'is concerned for my well-being and lifestyle and helps me make wise health care choices', answers consistent with the original aims.

The average duration and cost of hospital care per person in the year prior to the intervention was 42 days (SD = 44), at a cost of \$AU16 625. In the year of the intervention the average duration was 23 days (SD = 37, $F = 19.9, p < 0.001$) at a cost of \$AU9143 ($F = 18.6, p < 0.001$). The hospital data were also skewed but the difference between the years remained significant when a non-parametric test was used. The cost/bed day did not alter over the 2 years studied. The cost of the Helping Hands programme was \$AU895 per person. The cost benefit ratio was 1:8.4.

Discussion

Helping Hands was a very structured, telephone-based, proactive support programme for people with relapsing mental disorders. It was conducted by highly trained health workers. Fifty-seven per cent of the patients enrolled in the programme completed the year, most of the completers made good use of the programme and most reported themselves satisfied with their fund's initiative. Their psychological distress scores reduced and their need for hospitalization decreased, both significantly. The programme

was not expensive and savings to the Fund that accrued from reduced hospitalization covered the outlay on the programme eightfold. Hospitalization rates among the people who did not enrol for the programme or among those who dropped out would have been of interest but were not available to the authors. Adherence (57%) was acceptable, if not ideal, and may have defined a subgroup more likely to benefit from such a procedure. In that sense the results may not generalize to an unselected group of patients. Some of the improvement could be due to regression to the mean and some due to demand characteristic of pleasing a case manager. Nevertheless the changes were substantial, comparable to changes in the K10 seen in a depression treatment programme [3].

This was an examination of a quality assurance programme. There was no control group and a phase 2 randomized controlled trial is now indicated, one that controls for adherence, identifies the characteristics of participants and includes functioning as well as distress among the outcome indicators. It would also be valuable to identify the components of the programme that patients found especially helpful.

The Fund issues a regular newsletter on health-related topics with the aim of improving the health of its members. It has previously offered an intervention targeting members with cardiovascular conditions. Although the Helping Hands programme seemed little different to the cardiovascular programme, it did attract criticism. One specialist psychiatrist complained to the Privacy Commissioner and to the media about her patients being contacted. No other psychiatrists complained. The Privacy Commissioner investigated the matter and was satisfied that HCF met the requirements of the Privacy Act. Another criticism was that the doctor-patient relationship could be disturbed by the intrusion of the Fund into the relationship. Because some patients had seen numbers of private psychiatrists over the 2 years it was difficult for the Fund to determine with whom the patients had a special relationship. When this study is repeated it would be advisable to involve the clinicians from the beginning.

Apart from the study mentioned in the introduction we were unable to find any comparable study in the mental health literature; that is, the use of proactive telephone support in a private

fee-for-service environment in which payment for hospital admission is funded separately from payment to the specialist physician. Much of the existing proactive care literature focuses on improving the treatment of depression in primary care settings through the use of collaborative care. A series of randomized controlled trials have demonstrated that proactive care for depression can significantly improve treatment outcomes at a moderate increase in cost [4,5]. Collaborative care that leads to patient self-management has been shown to be effective in a number of chronic physical conditions such as asthma, diabetes and arthritis [6], but studies in mental disorders are lacking.

If a phase 2 trial produces similar results the implications will be that telephone support services are cost-effective and result in improved well-being and lessened need for return to hospital. They should be more widely available in the public as well as in the private sector.

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References

1. Taylor CE, LoPiccolo CJ, Eisdorfer C, Clemence C. Reducing rehospitalization with telephonic targeted care management in a managed health care plan. *Psychiatr Serv* 2005; 56:652-654.
2. Kessler RC, Andrews G, Colpe LJ *et al*. Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychol Med* 2002; 32:959-976.
3. Perini S, Titov N, Andrews G. Clinician-assisted Internet-based treatment is effective for depression: randomized controlled trial. *Aust N Z J Psychiatry* 2009; 43:571-578.
4. Katon WJ, Seelig M. Population-based care of depression: team care approaches to improving outcomes. *J Occup Environ Med* 2008; 50:459-467.
5. Wells KB, Schoenbaum M, Duan N, Miranda J, Tang L, Sherbourne C. Cost-effectiveness of quality improvement programs for patients with subthreshold depression or depressive disorder. *Psychiatr Serv* 2007; 58:1269-1278.
6. Bodenheimer T, Lorig K, Holman H, Grumbach K. Patient self management of chronic disease in primary care. *JAMA* 2002; 288:2469-2475.