

Audit in practice

Method in our madness? An audit of a regional adolescent unit

SIMON GOWERS, Senior Lecturer in Child & Adolescent Psychiatry, University of Manchester; KEN ENTWISTLE; NORMAN COOKE; BELLA OKPALUGO; and ANN KENYON, Cloughside School, Prestwich Hospital, Prestwich, Manchester M25 7BL

Adolescent psychiatric services differ considerably in terms of the patient groups they seek to address and in their modes of treatment (Health Advisory Service, 1986). The Prestwich Adolescent Unit is a general purpose, seven day, regional service for adolescent psychiatry, based in Salford Health Authority. Serving a population of 4½ million, it offers a mix of in-patient, day-patient, out-patient and consultation/liaison work, specialising in the treatment of mental illness.

The present study aimed to address the need to know more about the demographics of the patients referred and thus to enable us to consider whether we are providing the service we ought, to those we ought to treat. Secondly, we wished to examine the group of patients receiving in-patient treatment (approximately 1/5 of referrals), for a logical basis for selection. Wells (1989) has discussed the rationale for admission to a similar unit and the pathways through which psychiatric patients reach care has been the subject of a recent WHO multicentre study, the results from Manchester having been published (Gater & Goldberg, 1991).

It is not easy to define the population we ought to treat. It ought, surely, to be sociodemographically representative. Secondly, it ought to be clinically representative, to the extent that a psychiatric service might be expected to be managing cases with the sorts of mental illnesses which befall adolescents. Thirdly, a health service ought to be treating the patients who want to be treated by the service. However, there are clearly difficulties in the area of motivation and adolescent psychiatry. Finally the service ought to relate to the needs and desires of its referrers and their satisfaction with the management of referred patients. A previous study (Gowers *et al.*, 1991) reported the professed wishes of 180 referrers from five disciplines. It seemed opportune to assess the extent to which they referred as they suggested they would like and the extent to which we appeared to respond.

The study

This was based on a retrospective analysis of case notes. All cases offered an initial assessment in a two year period from July 1988 were included (n 292). Seventeen cases were excluded due to mislaid/loaned out casenotes n 8, inadequate information n 9. Information from the remaining 275 cases was entered onto a coding proforma in numerical form for computer analysis.

Because of well documented methodological difficulties of extracting clinical material retrospectively, the proforma concentrated on demographic features, items relating to the referrer and administrative outcome. Much of this material was obtainable from the referral letter (usually typed) and a lengthy background information form sent to new patients before assessment, asking parents (or substitute) about family structure including ages, past contact with services etc.

Administrative outcome was assessed by presence or absence of in-patient notes/number of out-patient sessions recorded. In this way a high level of reliability was sought. Of 118 items on the coding sheet, 32 dealt with sociodemographics, 54 with clinical features and 32 with family and educational factors. This study reports on data derived from the sociodemographic section, 26 clinical variables and four family items.

The clinical items were restricted to a principal diagnosis (six categories) and a clinical symptom list. The clinical symptom list was a 23 item inventory, with a two point (yes/no) coding. Cases were coded positive if the relevant symptom was clearly mentioned in the referral letter, the post-assessment summary or the discharge letter. All diagnoses were made by the psychiatrist (SG). The clinical symptom list items were also cross-checked by the psychiatrist and where agreement could not be reached, his verdict was final. Inter-rater reliability was measured by blind cross-scoring of 20% of the sample for all items.

Using a null hypothesis that the variables under examination did not vary with geographical factors or the profession of the referrer, the χ -square test was utilised to compare observed with expected frequencies of categorical variables. Where necessary the number of categories was reduced by grouping, to reduce the maximum size of tables to 5 × 5.

Similarly, the observed frequencies of variables relating to those admitted for in-patient treatment were compared

with those receiving alternative (or no) treatment, to see if the in-patients could be distinguished on clinical, demographic or administrative grounds.

Findings

The inter-rater coding concordance for the 62 variables under consideration, based on a 20% sample, averaged 60.3 (97.0%). This was considered an acceptable margin of error.

In the two years under survey (June 1988–June 1990), 275 patients were included in the analysis, (129 boys, 146 girls); 263 were between the ages of 11 and 18, with 200 (73%) aged 14–16 inclusive. One hundred and four (38%) originated from other child and adolescent psychiatrists, while GP and social work referrals accounted for 51 (19%) and 44 (16%) respectively. Other hospital and community doctors referred a further 31 (11%), with the courts accounting for the largest part of the remainder. Emotional/neurotic disorder was the most frequent diagnosis (82 cases), with conduct disorder and mixed emotional/conduct accounting for 40 and 49 referrals respectively. Eating disorder and psychoses were each the main diagnosis in 31 cases, with organic and other disorders were encountered relatively rarely.

Fifty-eight patients were admitted as in-patients (21%) and 10 (4%) as day patients. A further 74 (27%) received ongoing out-patient treatment, with a small number being managed by extended consultation/liaison. At least 30 additional patients (or their families) turned down the offered treatment having completed the assessment.

Associations with geographical distribution

During the two years under examination, referrals were received from all 19 districts within the NW region. There were 17 extra-regional referrals. Sixty referrals arose from the base district (Salford) and the referral rate decreased steadily with distance from the unit. What then determines whether patients are referred from outlying districts?

When patients' home districts were grouped on the basis of distance from the unit, there was no significant association with referrer by discipline, although there was a slight tendency for an increased rate of referral from child psychiatry with increasing distance. However the proportion of GP referrals was close to the overall rate of 19% throughout.

The proportion of cases of psychosis in Salford was low (2/60), while conduct or mixed conduct/emotional disorder was high (33/60). Each of the six classes of diagnosis was significantly represented in referrals from outlying districts including those outside the region.

Treatment factors were related to geographical distribution, with the chance of an offer and acceptance of in-patient treatment increasing markedly with distance from the unit. Only 9% of local cases were admitted, compared with 28% from districts other than Salford or those bordering on it ($P < 0.01$). Out-patient treatment and

no further offer of treatment were, however, possible outcomes independent of distance. Thirty patients declined treatment and they were evenly distributed geographically, in terms of expectation by referral rate.

Associations with referrer

There were several associations with the referrer's discipline. Although the modal age of referral was 15 for each, child and adolescent psychiatric referrals were significantly younger ($P < 0.01$). Ninety-six (37%) referrals lived with both natural parents, but the rate varied from 53% of GP referrals and 40% from child and adolescent psychiatry, to only 14% of social services referrals.

The highest levels of significance were found in association with the distribution of diagnoses and the likelihood of receiving a particular mode of treatment, depending on the profession of referrer. All referrals of psychotic illness came from doctors, 21/31 from child and adolescent psychiatry. A similar pattern was found for eating disorder. Cases of pure conduct or emotional disorder originated from all referrers, but social services referrals were found to be dominated by mixed conduct and emotional disorder.

There were also significant associations between origin of referral and the presence of certain problems/symptoms. Depression was a particularly common feature of child psychiatric referrals (47% of referrals) and to a lesser extent of referrals from other doctors (excluding general practitioners). This, however, was not explained by tertiary referral of worrying cases of parasuicide, as social services referrals contained the highest rates of this behaviour (37% of social services referrals as against 29% of child psychiatric referrals). Sexual abuse was known to be a feature in 39 cases (15%). While this may represent an underestimate of prevalence within the overall population, it is noteworthy that this was known to be a concern in only 4% of GP referrals, rising to 13% of child psychiatry referrals and as many as 30% of social service cases.

Referrals from child psychiatry were significantly more likely to be met with an offer of in-patient treatment and this was accepted in 80% of cases. Of referrals from child psychiatry, 38% were admitted compared with 14% from all other referrers. GP referrals were, meanwhile, likely to result in on-going out-patient work. Referrals from doctors overall were more likely to result in ongoing treatment, (112/175 cases = 64%), compared with 30/83 (36%) of non-medical referrals.

Associations with treatment received

As stated, both the distance from the unit and the profession of the referrer predicted the form of treatment received. When the characteristics of those receiving in-patient treatment are compared with those disposed of otherwise, there are several additional important findings. Diagnosis is a strong predictor of treatment; the number (and percentage) of each diagnosis receiving in-patient treatment being 15/31 (49%) for psychotic patients, 10/31 (32%) for eating disorder, 19/82 (23%) for emotional disorder, 7/49 (16%) for mixed disorder and only 4/39 (10%) for pure conduct disorder. This variability in chance of admission was highly significant ($P < 0.001$).

Of the items on the clinical symptom list, none, including depression, school refusal, parasuicidal behaviour, anxiety, drug or alcohol abuse and sexual abuse were associated

with a significantly higher rate of admission compared with the total sample. Indeed, only truancy was related (inversely) to subsequent admission.

There were no relationships between the likelihood of a particular treatment and sex of patient, or seniority of the doctor providing the assessment and in-patient treatment, although there was a marked tendency for more junior doctors to engage with patients in out-patient treatment, rather than deal with cases by consultation or provide an opinion alone; (percentage of cases receiving out-patient treatment = consultant 20%, senior registrar = 37%, SHO/registrar = 40%). There is an association with age, 15 being the age most likely to result in admission (36% of referrals of this age, compared with 24% of 14-year-olds, 17% of 16-year-olds and 5% of those aged 17 or older).

Who you live with has an apparent effect on the treatment you are likely to receive from our service. Adolescents who live in institutions or independently from their families have only a 9% chance of receiving in-patient treatment. This contrasts with a 27% chance of receiving in-patient treatment if you live with one or more parents or other family members. Those teenagers living with only one natural parent (with or without step-parent) were admitted most frequently, (31/91 cases = 34%). The overall difference in rates of admission across five categories of home (with both parents, with one parent, fostered or adopted, institution, independent) was significant ($P < 0.01$).

Comment and conclusions

Over the two years of the survey, the adolescent unit provided a clinical service to patients with a wide variety of disorders, from every part of the catchment area, referred by a variety of professions. One in five were selected for admission.

One's chance of referral are not independent of geographical, clinical or professional factors. Having completed an assessment the chance of receiving in-patient treatment is even more dependent on these variables. Judging whether this implies a prejudicial practice or an appropriate filter system, within or without the service is problematic.

We see few cases of neurotic disorder referred by GPs based in the furthest corners of the region. An adolescent living in a childrens' home in Salford and presenting with a conduct disorder is unlikely to gain

admission. A child psychiatric referral of a psychotic adolescent or one with anorexia nervosa is likely to be offered admission. These practices can probably be defended in terms of the more appropriate use of local services, the opportunity for alternative (liaison) management and failure of local specialist management respectively. On the other hand, is the higher rate of child psychiatry referral with increasing distance really about effective filtering or lack of awareness of the service by others outside the discipline? Are we right to offer our scarce admission facility preferentially to those with mental illness and to those referred by colleagues, or are we discriminating against non-medical referrers, struggling with very deprived adolescents, unable to receive therapeutic support? Is the modal age of admission (15) likely to reflect morbidity, the willingness of adult services to provide for older patients or a rigidity in a system, unable to provide for those not willing to attend the unit school?

The answers might best be provided by asking the referrers. Our referrer satisfaction study, while suggesting high levels of satisfaction overall, showed highest levels of satisfaction within our own discipline (Gowers *et al*, 1991).

As an audit should have implications for changing practice, it is surely incumbent on us to disentangle these vexing questions and consider others, such as racial issues, not covered by this study.

References

- GATER, R. & GOLDBERG, D. (1991) Pathways to psychiatric care in South Manchester. *British Journal of Psychiatry*, **159**, 90–96.
- GOWERS, S. G., SYMINGTON, R. E. & ENTWISTLE, K. (1991) Who needs an adolescent unit? A referrer satisfaction study. *Psychiatric Bulletin*, **15**, 537–540.
- NHS HEALTH ADVISORY SERVICE (1986) *Report on Services for Disturbed Adolescents. Bridges over Troubled Waters*. London: HMSO.
- WELLS, P. G. (1989) Why admit to a bed? Disposal of 1000 referrals to a regional adolescent service. *Psychiatric Bulletin*, **13**, 342–344.