

What proportion of primary psychiatric interventions are based on evidence from randomised controlled trials?

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Abstract

Objectives—To estimate the proportion of psychiatric inpatients receiving primary interventions based on randomised controlled trials or systematic reviews of randomised controlled trials.

Design—Retrospective survey.

Setting—Acute adult general psychiatric ward.

Subjects—All patients admitted to the ward during a 28 day period.

Main outcome measures—Primary interventions were classified according to whether or not they were supported by evidence from randomised controlled trials or systematic reviews.

Results—The primary interventions received by 26/40 (65%; 95% confidence interval (95% CI) 51% to 79%) of patients admitted during the period were based on randomised trials or systematic reviews.

Conclusions—When patients were used as the denominator, most primary interventions given in acute general psychiatry were based on experimental evidence. The evidence was difficult to locate; there is an urgent need for systematic reviews of randomised controlled trials in this area.

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Keywords: psychiatry, interventions, evidence

Introduction

There is evidence that the use of guidelines for clinical practice based on sound evidence of clinical effectiveness may improve clinical practice and, hence, patient outcomes.¹ It has also been argued that a useful measure of the quality of health care would be the degree to which a clinical service adhered to evidence based interventions.² However, the use of both of these strategies would be limited if the estimate that only 10%-20% of medical interventions are evidence based was correct.³

Ellis and his colleagues have recently pointed out that this estimate is misleading because, rather than counting the proportion of medical interventions which are based on evidence, it is more meaningful to estimate the proportion of patients in common clinical situations who receive interventions based on evidence.⁴ In a survey of patients treated by the general medicine service at the Oxford Radcliffe Trust, they found that over 50% of patients received treatment based on evidence from randomised controlled trials.⁴ The proportion rose to over 80%

when convincing non-experimental evidence was also included. This finding indicates that it may be possible both to develop guidelines based on evidence and estimate the quality of care by measuring the use of interventions of known effectiveness.

It could be argued that acute general medicine is one area of medicine in which the standard of evidence is unusually high and that their findings are unlikely to be able to be generalised to other specialities or to general practice. The only way of ascertaining this is to repeat their study in other branches of medicine. Gill *et al* have recently reported a study in general practice which found that 81% of interventions were based on randomised controlled studies or convincing non-experimental evidence.⁵

We estimated the proportions of principle interventions, received by patients on a general psychiatric ward, which were based on randomised controlled trials or systematic reviews of randomised controlled trials.

Methods

The study sample consisted of all patients treated on one ward at the Warneford Hospital in Oxford between 28 May and 23 June 1995. Psychiatric services in Oxfordshire are sectorised, and the ward provided inpatient psychiatric services to a part of Oxford city centre. One consultant psychiatrist (JG) was responsible for the care of all but two patients included in the study, although treatment was often initiated by doctors who were not consultants. Although the medical staff were interested in medicine based on evidence and attempted to use therapeutic manoeuvres which they thought to be effective, they were not aware of the specific evidence of effectiveness in most cases. The study was not planned until after the study period and so it was unlikely that awareness of being observed influenced behaviour. At the end of the period, all notes were gathered and the principal clinical diagnosis (that which seemed to be the patient's main reason for admission) was determined for each patient and coded according to the diagnostic guidelines of the 10th revision of the international classification of diseases (ICD-10).⁶ The primary intervention, which represented the most important attempt to cure or alleviate the primary diagnosis after admission, was identified.

A search was first performed with Medline (accessed by Silver Platter Information) for a

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Table 1 Primary diagnoses and therapeutic interventions based on randomised controlled trials

Primary diagnoses	Primary medical intervention	Patients (n)	Reference for randomised controlled trials (systematic review)	Rating of study*
F10 Alcohol withdrawal state	Chlordiazepoxide withdrawal regimen	1	10	B
F20 Schizophrenia	Chlorpromazine	2	11 (12)	B
Control of exacerbation of psychotic symptoms	Trifluoperazine	4	(12) 13	A
	Haloperidol	1	(12)	B
	Zuclopenthixol acetate (intramuscular)	1	14	B
	Sulpiride	3	(15)	B
	Risperidone	1	16	B
Establishment of prophylactic treatment	Depot neuroleptic treatment	4	17	B
F31 Prophylaxis for bipolar affective disorder	Lithium carbonate	2	18	B
F32/F33 Depressive episode or disorder	Amitriptyline	2	19	A
	Paroxetine	1	20	B
	Moclobemide	1	21	B
	Lithium augmentation of antidepressant resistant disorder	3	22 (23)	B
Total		26(65%)		

* According to classification of the description of randomisation in the Cochrane collaboration handbook.

systematic review of randomised controlled trials of the effectiveness of the specific treatment used in each condition. If a systematic review was not found, a randomised controlled trial was searched for. If several appropriate randomised controlled trials were found, we used the one which was most appropriate for the clinical situation. For example, for antidepressants, we chose a study performed in an inpatient setting rather than in primary care. Very small randomised controlled trials comparing two active treatments were not used because of the high likelihood of a type II error. For treatments introduced before 1966, hand searches of the *British Journal of Psychiatry*, *American Journal of Psychiatry*, *Journal of Mental Science*, *Journal of Nervous and Mental Disease*, and *Archives of General Psychiatry* were also performed. We used published guides to critically appraise randomised controlled trials and systematic reviews.^{7,8} Randomised controlled trials were graded according to the guidelines of the Cochrane collaboration, which classes studies

Table 2 Primary interventions not based on experimental evidence

Primary diagnosis (ICD-10)	Primary medical intervention	Patients (n)
F10 Withdrawal state	Chlordiazepoxide and thioridazine	1
F25 Schizoaffective psychosis	Increase amitriptyline to 150 mg (already on several other drugs)	1
	Lithium carbonate and thioridazine	1
F31 Bipolar affective disorder (acute manic relapse)	Lorazepam and sulpiride (refused lithium)	1
	Lithium carbonate and chlorpromazine	2
	Lithium carbonate and droperidol	1
F33 Recurrent depressive disorder with psychotic symptoms	Trifluoperazine and fluoxetine	1
F38.10 Recurrent brief depressive disorder	Antidepressant stopped	1
F43 Acute stress reaction	General supportive care	1
F60.3 Emotionally unstable personality disorder	General supportive care	2
F68.1 Factitious disorder (Munchausen's syndrome)	Zuclopenthixol acetate (intramuscular)	1
Unknown	Observation - patient absconded	1
Total		14 (35%)

according to the description of the randomisation procedure. This has been found to correlate with the quality of the study.⁹ Three grades of randomisation were discriminated, ranging from A (adequate), if there was a description of independent random allocation, to C (inadequate), if allocation may have been influenced by the clinician or was non-random.

On the basis of the evidence, each primary intervention was classified into one of two groups: (a) intervention based on evidence from randomised controlled trials or systematic reviews of randomised controlled trials; (b) interventions without evidence from randomised controlled trials. This included drug regimens based on pathophysiological principles rather than randomised controlled trials, and combinations of drugs which had not been subjected to randomised controlled trials

The primary intervention was considered to be that actually received by the patient — some patients chose not to accept the intervention of choice. We purposely restricted the interventions we considered to specific interventions such as drugs, electroconvulsive therapy, or specific forms of psychotherapy rather than interventions involving service organisation, such as admission to hospital.

Results

During the 28 day period, a total of 43 patients were treated on the 24 bed ward. Three patients were transferred to other wards before definitive treatment was started. These patients were excluded from the study. Twenty six of the remaining 40 patients (65%; 95% confidence interval (95% CI) 51% to 79%) received primary interventions which were based on evidence from randomised controlled trials or overviews (table 1). When a systematic review and a randomised controlled trial which particularly suited the clinical problem were located, both were cited. Table 2 shows the primary interventions not based on experimental evidence. Of these, one patient refused the preferred treatment (which would have been based on evidence from a randomised controlled trial) and five subjects received combinations of drugs which have not, so far as we could tell, been evaluated in randomised controlled trials although they seemed to be widely used in clinical practice.²⁴ One patient, in whom a firm diagnosis of Munchausen's syndrome was subsequently made, received an emergency intramuscular injection for disturbed behaviour and simulated psychotic symptoms (which would have been based on evidence if the psychotic symptoms had been genuine).

Discussion

In 65% of the psychiatric patients who were treated on the ward during the 28 day period the primary medical intervention was based on a randomised controlled trial or a systematic review of randomised controlled trials. This proportion is not significantly higher than that reported in general medicine (53%, χ^2 1.65, df 1, P=0.20) with a similar study protocol.⁴

Although the design of our study was similar to that used by Ellis *et al*, one notable difference was that it was performed retrospectively at the end of the month and so was less likely to be susceptible to a Hawthorne effect. However, the consultant was aware of the study by Ellis *et al* and it remains possible that his management decisions were influenced by this knowledge, although he did not make all the treatment decisions. Even if the findings cannot be generalised to other psychiatric units, they still imply that most primary medical interventions in psychiatric inpatients can be based on evidence. Indeed, as no prospective attempt was made to maximise the proportion of interventions based on evidence, it is likely that an even higher proportion is potentially achievable. It is also possible that we failed to find existing evidence for some interventions.

In interpreting our findings, it is important to bear in mind that psychiatry is a multidisciplinary specialty and that other interventions made by the medical and nursing staff or by the occupational therapists and psychologists are likely to be related to the quality of care. It is probable that the proportion of interventions which are based on evidence would have fallen if we had included every intervention.

It may be argued that the proportion was high because most of the primary medical interventions were pharmacological, and randomised controlled trials are required by the licensing authorities. Furthermore, perhaps admission to hospital was the primary medical intervention for every patient. We do not consider that these points alter the main conclusion of the study — that is, with patients as the denominator, most primary medical interventions given to psychiatric inpatients are based on evidence.

However, we cannot conclude that there is systematically reviewed and readily available evidence for most psychiatric interventions. The evidence was difficult to find and we only found two usable systematic reviews of randomised controlled trials. Furthermore, several different drugs were used in specific disorders — for example, schizophrenia and depression — because there is a lack of good evidence on the comparative efficacies or cost effectiveness of treatments in psychiatry.²⁵ Many randomised controlled trials of psychotropic drugs are aimed at showing that new compounds are as effective as older drugs, but with reduced side effects. It is likely that, if more systematic reviews were available, our estimate of the proportion of interventions which were based on evidence would change. There was very little experimental evidence for the interventions in patients who did not have schizophrenia or affective disorders. In general, the commonest interventions in the most often diagnosed disorders were the best evaluated.

Our study was small and based on one inpatient ward. We do not know whether our findings could be generalised, and it would be useful to undertake surveys of the proportion of mental health interventions which are based on

sound evidence in other settings. There is also an urgent need for systematic reviews of the randomised controlled trials (published and unpublished) which have been undertaken. These should not be restricted to primary psychiatric interventions, but need to include other interventions which are potentially clinically effective. Systematic reviews are required before developing guidelines based on evidence and before adherence to interventions of known effectiveness is used as a measure of the quality of psychiatric inpatient care.

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