Cost-effectiveness of referral for generic care or problem-solving treatment from community mental health nurses, compared with usual general practitioner care for common mental disorders


Record Status
This is a critical abstract of an economic evaluation that meets the criteria for inclusion on NHS EED. Each abstract contains a brief summary of the methods, the results and conclusions followed by a detailed critical assessment on the reliability of the study and the conclusions drawn.

Health technology
The study compared three management strategies for patients with common mental disorders. The strategies were usual general practitioner (GP) care, generic community mental health nurse (CMHN) care, and problem-solving treatment (PST) provided by specially trained CMHNs.

Type of intervention
Treatment.

Economic study type
Cost-utility analysis.

Study population
The study population comprised adult patients aged between 18 and 65 years who had a new episode of anxiety, depression or reaction to life difficulties. The patients included in the study had symptoms of between 4 weeks and 6 months in duration, and a score of 3 or more on the General Health Questionnaire 12-item version (GHQ-12). Patients who had a current contact with psychiatric services or were under current psychological treatment were excluded from the study, as were those with inadequate understanding of the English language. Further exclusion criteria were severe mental disorder or substance misuse, dementia and active suicidal ideas.

Setting
The setting was primary care. It was reported that CMHNs were recruited from four mental health trusts. The GP practices included in the study covered urban, suburban and rural locations. The economic study was carried out in the UK (Hampshire and Dorset).

Dates to which data relate
The recruitment of study participants (patients and health staff) was undertaken between May 2000 and September 2001. Eligible patients were allocated to a treatment group between February 2001 and April 2003. The cost data related to 2000 and 2003. The price year was 2003.

Source of effectiveness data
The effectiveness data were derived from a single study.

Link between effectiveness and cost data
The costing was carried out prospectively on a sub-group of patients from the sample used in the effectiveness study.
Study sample
Power calculations were conducted to determine a sample size that would detect differences of 5-points on the Clinical Interview Schedule - Revised (CIS-R) psychiatric symptoms scale. A sample of at least 65 patients completing follow-up in each arm was required to achieve 80% power for the main comparisons at a 5% significance level. Allowing for a 20% dropout rate, a sample of 246 patients was necessary. GPs, during standard consultations, identified eligible patients according to the inclusion and exclusion criteria and referred them by fax. Initially, GPs referred a total of 374 patients of which only 307 met inclusion criteria. Of these, 60 refused to participate in the trial. Thus, 247 patients were included in the study. There was 78 in the GP group, 79 in the CMHN group and 90 in the PST-CMHN group. Fifty-three community nurses were recruited, of which 29 were allocated to the generic nurse care arm and 24 to the nurse PST arm. In total, 98 GPs referred patients for the study.

Study design
This was a randomised, multi-centre (62 GP practices) controlled trial. Initially, nurses were randomly allocated to the generic or problem-solving group. Patient randomisation was conducted through a telephone service provided by the University of York. Stratification was conducted according to GP, with an unstable block size that varied between three and six. Research assistants, masked to patient allocation, conducted the assessments. In addition, patient assessment was self-completed to avoid possible bias.

The patients were followed up at 8 and 26 weeks. Eighty-six per cent were followed up at 8 weeks and 77% at 26 weeks. However, losses to follow-up differed between the three groups. At 8 weeks, 21 (27%) patients were lost to follow-up in the GP group (16 due to refusal and 5 due to intractability), compared with 5 (6.4%) in the CMHN group (3 due to refusal and 2 due to intractability) and 9 (10%) in the PST-CMHN group (7 due to refusal and 2 due to intractability). At 26 weeks, 3 (3.8%) patients were lost to follow-up in the GP group (1 due to refusal and 2 due to intractability), compared with 10 (12.6%) in the CMHN group (2 due to refusal and 8 due to intractability) and 9 (10%) in the PST-CMHN group (4 due to refusal and 5 due to intractability).

Analysis of effectiveness
The analysis of effectiveness was conducted on an intention to treat basis. The primary health outcome was psychiatric symptoms on the self-completed CIS-R (computerised version PROQSY 3). Scores were compared between the three groups using analysis of covariance. The analysis was conducted separately for the 8- and 26-week assessments. A secondary outcome was social outcome assessed using the self-report Social Adjustment Scale (SAS), a 45-item scale that measures functioning in seven role areas. Patient satisfaction was assessed at 26 weeks using a self-reported questionnaire based on a 5-point scale evaluating the quality of PST. In addition, the degree to which each patient could benefit from CMHN treatment was also assessed using two rapid self-completed questionnaires, the GHQ-12 and Hospital Anxiety and Depression Scale (HADS). It was reported that the patient groups did not differ significantly in terms of their demographic and baseline characteristics. The groups also did not differ significantly in their initial CIS-R generated primary diagnosis, as defined by the International Classification of Diseases (ICD-10).

Effectiveness results
For the CIS-R at 8 weeks, the total mean score was 13.8 (standard deviation, SD=13.9) in the GP group, 16.9 (SD=12.1) in the generic CMHN group and 15.0 (SD=11.4) in the PST-CMHN group. When compared with the GP group, the mean difference in scores was 1.40 (95% confidence interval, CI: -2.79 to 5.6) for the generic CMHN group and -1.21 (95% CI: -5.23 to 2.80) for the PST-CMHN group.

At 26 weeks, the total mean score was 10.1(SD=10.9) in the GP group, 10.4 (SD=9.4) in the generic CMHN group and 12.8 (SD=12.0) in the PST-CMHN group. When compared with the GP group, the mean difference in scores was -1.39 (95% CI: -5.54 to 2.77) for the generic CMHN group and 1.13 (95% CI: -2.88 to 5.14) for the PST-CMHN group. Differences in scores between the groups were not statistically significant.

The patient satisfaction score at 26 weeks was 31.6 (SD=7.6) in the GP group, 37.2 (SD=5.9) in the generic CMHN group and 37.6 (SD=5.8) in the PST-CMHN group. The difference between each of the nurse groups compared with the GP group was statistically significant, (p<0.001).
Clinical conclusions
The authors concluded "referral of unselected primary care patients with common mental disorders to a specialist mental health nurse confers no additional benefit over usual GP care".

Measure of benefits used in the economic analysis
The measure of benefit used was the quality-adjusted life-years (QALYs). The EuroQol EQ-5D instrument and public tariffs were used to estimate utility levels. QALYs were estimated as the area under the curve from the EQ-5D utilities, assuming a linear relationship between the values.

Direct costs
The health service costs included in the analysis were for nurse training and supervision, drugs, GP visits at surgery, GP home visits, GP telephone consultation, practice nurse visit at surgery, visit to social worker, home social worker, psychiatrist visit at the hospital clinic, psychiatrist visit at home, psychologist visit, outpatient visit, accident and emergency visit, hospital admission, further hospital contacts and out-of-pocket patient costs. The unit costs and the resource quantities were reported separately. Resource use was estimated using actual data, namely data on health care resources that were collected from CMHNs by administering a self-reported questionnaire to the patients at baseline, and at 8 and 26 weeks. At 26 weeks complete resource use data were available for 159 (64%) patients, but the results were presented for a total of 184 patients. Six-month records with complete CIS-R data were employed in order to apply conditional (group and follow-up point) mean imputation for missing data. The cost data were derived from official published sources and all costs were reported for the price year 2002/03. Discounting was not relevant as the costs were incurred during less than 2 years.

Statistical analysis of costs
Cost-differences between the groups were reported as means with 95% CIs.

Indirect Costs
Productivity losses, measured as days off work for patients in paid employment, were also included in the analysis. Data on days off work were collected from CMHNs by administering a self-reported questionnaire to the patients at baseline, and at 8 and 26 weeks. Productivity losses were estimated by multiplying days off work by average national earnings according to gender. The costs and the quantities were reported separately. All costs were reported for the price year 2002/03. Discounting was not necessary as the costs were incurred during less than 2 years.

Currency
UK pounds sterling (€).

Sensitivity analysis
Sensitivity analyses were conducted to investigate whether the CIS-R results were robust to assumptions made about missing data. Five methods were used to replace missing values. The methods were last observation carried forward, back to baseline, mean replacement, mean difference replacement and individual regression lines. In addition, a sensitivity analysis on resource use was conducted using data from GP general records for 229 (93%) patients instead of self-reported data, with conditional mean imputation conducted for missing items.

Estimated benefits used in the economic analysis
No statistically significant differences between the three groups were observed in EQ-5D utility levels at 8 and 26 weeks.
Cost results
The total costs were reported per patient. The mean total direct health service cost to the NHS was 283 (SD=300) in the GP group, 569 (SD=350) in the generic CMHN group and 608 (SD=501) in the PST-CMHN group.

Health service related out-of-pocket payments were 33 (SD=82) in the GP group, 30 (SD=55) in the generic CMHN group and 23 (SD=52) in the PST-CMHN group.

Productivity losses were reported separately. These were 3,787 (SD=7,540) in the GP group, 3,694 (SD=8,464) in the generic CMHN group and 5,880 (SD=12,727) in the PST-CMHN group.

The mean difference between the generic CMHN and GP groups was 295 per patient (95% CI: 259 to 337; p<0.001), and between the CMHN-PST and GP groups 303 (95% CI: 275 to 327; p<0.001).

Differences in productivity losses were not statistically significant between the groups.

Synthesis of costs and benefits
An incremental cost-effectiveness analysis was performed by demonstrating incremental costs and incremental QALYs comparing PST-CMHN care with GP care, and generic CMHN care with GP care. In both cases, care provided by nurses was dominated by GP care.

The sensitivity analyses demonstrated that the main CIS-R results were robust. In addition, data on resources used were also robust after using GP data instead of self-reported resource use data.

Authors' conclusions
The analysis demonstrated that general practitioner (GP) care is the most cost-effective method to treat patients with common mental disorders in the community.

CRD COMMENTARY - Selection of comparators
The comparators used were described in detail and their choice was explicitly justified. You should decide if these methods of care are widely used in your own setting.

Validity of estimate of measure of effectiveness
The analysis was based on a multi-centre randomised controlled trial, which was appropriate for the study question. The study sample was representative of the study populations. Patient demographic and baseline characteristics were reported in detail and it was demonstrated that patient groups, as well as the sub-groups on which the economic analysis was conducted, were comparable at analysis. The internal validity of the study was good. In particular, the methods of randomisation, masking, techniques used to avoid possible biases, the length of the study, and the loss to follow-up were all reported in detail. In addition, the analysis of effectiveness was handled credibly as the outcomes were analysed on an intention to treat basis. Conditional mean imputation of missing data further enhanced the robustness of the results. Finally, power calculations were reported and these demonstrated that an adequate sample size was attained.

Validity of estimate of measure of benefit
Health utility (QALYs) was used as the measure of benefit in the economic analysis, and was estimated using the EuroQol ES-5D instrument. This enables the results to be compared with other health care technologies and programmes.

Validity of estimate of costs
The analysis of the costs was performed from the perspective of the NHS as well as a societal perspective. In both cases, it appears that all the relevant categories of costs have been included in the analysis. The unit costs and the
resource quantities were reported separately, thus enhancing the reproducibility of the results in other settings. The sensitivity analysis on resource use data demonstrated the robustness of the base-case estimates. Although the cost data were derived from official national sources, they were treated deterministically and no sensitivity analysis of the costs was conducted; this may limit the interpretation of the findings.

Other issues
The authors compared their findings with those from other studies and found them generally to be in agreement. The generalisability of the results to other setting is supported by the high internal validity of the study and, as the authors specifically pointed out, the geographical spread of GP practices included. The results of the analysis were reported thoroughly. The study involved patients with common mental disorders and this was reflected in the authors’ conclusions.

The authors reported a number of limitations to their study. In particular, they acknowledged that a 4- to 5-point difference in CIS-R score between the three methods cannot be excluded with 95% confidence. In addition, given the fact that PST provided by trained nurses could not be monitored for all cases, there may be uncertainty around the faithfulness of the method of treatment provision. The fact that the GPs did not refer all eligible patients for the trial might have introduced referral bias. Bias might also have been introduced to the results on account of the lower follow-up rates in the GP care group, as the course of disease could be monitored for those who dropped out. However, the sensitivity analysis demonstrated the robustness of the results.

Implications of the study
The authors explicitly recommended that patients with common mental disorders should not be referred to CMHNs and should be managed by GPs, since on the one hand there are no additional benefits, and on the other, the referral generates greater costs and greater workload to CMHN teams. The authors called for further research to explore factors that affect the chronicity of common mental disorders in order to allow provision of specific treatment to patients who are likely to make progress in the short term in usual GP care.

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