# Investigation of whether on-site general practice counsellors have an impact on psychotropic drug prescribing rates and costs

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*SUMMARY*

***Background.*** *Counselling services are now widespread within general practice. Although the cost-effectiveness of such services has yet to be fully investigated, benefits could include a reduction in prescribing of psychotropic drugs and of other drugs.*

***Aim.*** *A study set out to determine whether practices with counsellors differed from those without in terms of their prescribing rates and costs of psychotropic drugs.*

***Method.*** *Prescribing analyses and cost (PACT) level two data reports for the quarter to November 1991 ending January 1992, as appropriate, were sought from 354 practices with counsellors and a matched sample of 216 practices without counsellors which had participated in a previous national survey of counselling in general practice. The drug groups examined were: hypnotics and anxiolytics; antidepressants; analgesics; all central nervous system drugs; and all drugs apart from central nervous system drugs. For each group of drugs, the numbers of prescribed items, total prescribing costs, and costs per item were expressed as a proportion of the practice's number of prescribing units (that is, the age-adjusted number of registered patients) and as a percentage of the average for similar practices in its family health services authority. Practice characteristics were compared between practices with an on-site counsellor and those without. Practices with and without counsellors were compared with respect to their prescribing indicators.*

***Results.*** *PACT reports were obtained from 214 practices (response rate 38%) — 126 with counsellors and 88 without. Practices with counsellors and practices without counsellors were well matched in terms of location, list size, proportion of elderly patients, training and fundholding status, and number of health promotion clinics. No significant differences were found between practices with and without counsellors in the prescribing indicators for any group of psychotropic drugs examined or for central nervous system drugs as a whole.*

***Conclusion.*** *There were no appreciable differences found in this study between practices with and without counsellors in terms of psychotropic drug prescribing rates or costs. The reasons for this are unclear; more indepth studies of individual counselling services are required.*

*Keywords: psychiatric disorders; counselling; psychotropic drugs; prescribing rates; comparative studies.*

## Introduction

COUNSELLING services are widespread within general practice; one in three general practices in England and Wales now provides an on-site counselling service.[1] Although the cost-effectiveness of such services has yet to be fully investigated,[2] possible benefits could include a reduction in prescribing of psychotropic drugs and of non-psychotropic drugs. Counselling services might increase a practice's capacity to manage minor psychiatric illness using psychological interventions, so reducing the need for psychotropic drugs. Counselling might additionally reduce the prescribing of non-psychotropic drugs by relieving the psychosomatic problems that may accompany psychiatric or other illness.

The evidence that on-site counsellors are effective in reducing practice prescribing is, however, anecdotal and contradictory. Anderson and Hasler surveyed 80 patients attending one practice counsellor and found that psychotropic medication was reduced or stopped for 28 patients during counselling treatment.[3] Waydenfeld and Waydenfeld audited the counselling services provided by nine group general practices and showed that psychotropic drug prescribing for 99 patients seen by counsellors was lower in the six months after counselling than in the six months before counselling.[4] On the other hand, Martin and Martin found that psychotropic drug prescribing increased by 88% over a 12-month period for 87 patients attending one practice counselling service.[5] Psychotropic drug prescribing in the practice as a whole increased by 4% in the seven years following the introduction of the counsellor, giving rise to the suggestion that counsellors may 'sensitize' general practitioners 'to the emotional needs of patients'.[5] More recently, Fletcher and colleagues examined psychotropic drug prescribing rates and costs among 74 Oxfordshire practices with different levels of counselling provision.[6] Practices that directly employed counsellors tended to have a higher volume and cost of psychotropic drug prescribing than did practice that referred patients to counsellors outwith the practice premises.[6]

No clear estimation of the impact of counsellors on practice prescribing has been reached, in part because studies have been small and have lacked appropriate comparison groups. A study was undertaken that was able to overcome some of these limitations. Prescribing information was abstracted from the Prescribing Analyses and Cost (PACT) level two data reports of a representative sample of practices with counsellors and a matched group of practices without counsellors; the practices had participated in a previous national survey of counselling services in general practice.[1] The aim was to provide insight into the impact on practice prescribing of providing a counselling service on-site,

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that is, to determine whether practices with counsellors differed from those without in terms of prescribing rates and costs.

## Method

### *Sample*

The study groups were drawn from practices that had participated in a previous national survey of counselling services within general practice in 1992.[1] This survey had comprised a postal questionnaire and telephone survey of an approximately one in 20 sample of general practitioners in England and Wales of whom 1542 (82%) participated. Information was collected about practice characteristics and the provision of on-site psychiatric services. Specifically general practitioners were asked whether there was a person working on-site or within the practice who fulfilled the following definition: 'Someone who offers (formal) sessions to patients in which patients are helped to define their problems and enabled to reach their own solutions. General practitioners and others provide counselling in the ordinary course of their work, but we need to know about the provision of counselling as a distinct or separate activity within the practice'. Those persons who fulfilled this definition and who had no other job within the practice were designated counsellors for the purpose of investigation.

Practices were eligible for inclusion in the present study, in 1992–1993, if they: had participated in the national survey; had reported having an on-site counsellor who fulfilled the study definition; and gave permission for the counsellor to be contacted (a further phase of this study, not reported here, consisted of interviews with general practitioners and counsellors). Where possible, these practices were matched for partnership size and health authority region with practices that did not have a counsellor.

### *PACT reports*

PACT level two reports detail the numbers of encashed prescriptions, total prescribing costs, and the cost per item of drugs grouped according to *British National Formulary* (*BNF*) chapter and section headings.[7] The data for an individual practice are presented together with the average in the practice's family health services authority for a typical practice with the same number of prescribing units. Prescribing units are related to the practice list size by the formula:

No. of prescribing units =
(no. of patients aged under 65 years)
+ (no. of patients aged 65 years or over x 3)

Written consent to obtain PACT level two reports for the quarter ending November 1991 to January 1992, as appropriate, was sought from all general practitioners in eligible practices and from the family health services authorities. The Prescription Pricing Authority released the PACT reports for those practices for which all necessary permission had been obtained.

### *Analysis*

Data were entered on computer and analysed using *SPSSPC+*.

The practice characteristics of participant and non-participant practices with counsellors were compared in order to assess the representativeness of the study group. This information had been collected in the previous national survey.[1] Practice characteristics investigated included location, list size, proportion of elderly patients, social class of practice population, whether or not there was a personal list system, training and fundholding status, general practitioner partners' interest in psychiatry, and number of health promotion clinics. Participant practices with counsellors were also compared with participant practices without counsellors in order to assess whether the study and control groups were well matched. The significance of the differences in practice characteristics was assessed using the chi square test.

Prescribing information was handled in two ways. In order to control for variation between practices in list size and age structure, the numbers of prescribed items and prescription costs were expressed as the rate for the practice (number or cost of items per 100 prescribing units). In order to control for variation among family health services authorities, the numbers of prescribed items, prescribing costs, and costs per item were expressed as percentages of the authority average for each practice. These data were calculated for: hypnotics and anxiolytics (*BNF* section 4.1); antidepressants (*BNF* section 4.3); analgesics (*BNF* section 4.7); all drugs acting on the central nervous system (*BNF* chapter 4); and all drugs apart from central nervous system drugs. The significance of the difference between practices with and without counsellors was assessed by the Mann Whitney *U*-test. The 95% confidence interval for the difference between medians was calculated using *Minitab*.

In order to examine the relationship between the extent of counselling provision in a practice and practice prescribing, the median number of hours of counselling provided per week per 1000 registered patients (0.8 hours) was used to divide practices into 'low level' (below median) and 'high level' (above median) groups. Practices without counsellors formed a third group. The significance of the variation between groups in prescribing indicators was assessed by Kruskal–Wallis one-way analysis of variance.

## Results

### *Sample*

Of the original sample of 1542 practices, 484 had a counsellor; 354 of these practices were eligible for inclusion in the study. Of these 354 eligible practices, 216 could be matched for partnership size and health authority region with practices that did not have counsellors. The eligible sample therefore comprised 570 practices, 37.0% of the original sample of 1542 practices.

Of the 570 practices approached, permission was obtained and usable PACT data reports were therefore obtained for 214 practices (37.5%) — 126 with counsellors and 88 without. Among the 126 practices with counsellors, there were 42 with a person entitled 'practice counsellor', 37 with a community psychiatric nurse counsellor, 25 with a clinical psychologist counsellor, and 22 with some other type of counsellor. Thirty four counsellors were reported to be accredited by the British Association of Counsellors and a further 57 to have had specific training in counselling. According to the number of hours of counselling provided per week per 1000 registered patients, 64 practices were in the 'low level' group and 61 in the 'high level' group; data missing for one practice.

The 126 participant practices with counsellors were compared with the 358 non-participant practices with counsellors in order to assess the representativeness of the study group. There were no significant differences between groups in the practice characteristics examined (Table 1). Not all data were available for all practices.

The 126 participant practices with counsellors were compared with the 88 participant practices without counsellors in order to assess whether the study and control practices were well matched. There were no significant differences between groups except in relation to the social class distribution of the practice patient population: practices with counsellors were more likely than those without counsellors to serve a predominantly non-

**Table 1.** Characteristics of participating practices with and without on-site counsellors and non-participating practices with on-site counsellors.

| Characteristic | % (no.) of practices with characteristic | | |
|---|---|---|---|
| | Participant (with counsellor) | Participant (without counsellor) | Non-participant (with counsellor) |
| *Practice location* | | | |
| Urban | *42* (49) | *35* (30) | *45* (149) |
| Suburban | *44* (51) | *49* (42) | *34* (113) |
| Rural | *15* (17) | *15* (13) | *22* (72) |
| *List size (quartiles)* | | | |
| –4200 | *14* (17) | *14* (12) | *13* (46) |
| –7600 | *25* (31) | *26* (23) | *25* (89) |
| –10 500 | *26* (32) | *30* (26) | *30* (106) |
| –29 000 | *36* (45) | *31* (27) | *32* (113) |
| *% of list aged ⩾65 years* | | | |
| *⩽5* | *12* (13) | *20* (16) | *13* (42) |
| *6–10* | *53* (58) | *51* (41) | *51* (163) |
| *⩾11* | *35* (39) | *29* (23) | *36* (115) |
| *Social class of practice population* | | | |
| Mostly non-manual | *26* (32) | *15* (13)* | *22* (77) |
| Mostly manual | *36* (44) | *31* (27) | *35* (123) |
| Manual/non-manual | *38* (47) | *54* (47) | *43* (151) |
| *Personal list system* | *32* (39) | *29* (25) | *31* (107) |
| *Training practice* | *52* (65) | *43* (38) | *45* (158) |
| *Fundholding practice* | *9* (11) | *14* (12) | *14* (48) |
| *GP partner with interest in psychiatry* | *53* (66) | *60* (53) | *52* (184) |
| *No. of health promotion clinics* | | | |
| 0 | *9* (11) | *8* (7) | *4* (16) |
| 1 | *18* (23) | 20 (18) | *19* (67) |
| 2 | *25* (31) | *34* (30) | *23* (84) |
| 3 | *19* (24) | *23* (20) | *20* (73) |
| 4+ | *29* (37) | *15* (13) | *33* (118) |

Participants with counsellor compared with participants without counsellor: *$P<0.05$.

**Table 2.** Drug prescription rates and costs in relation to numbers of prescribing units (PUs) in 126 practices with and 88 without an on-site counsellor.

| Drug group | Median no./cost (25th, 75th centile) in practices | | Difference between medians (95% CI) |
|---|---|---|---|
| | With counsellor | Without counsellor | |
| *Anxiolytics/hypnotics* | | | |
| No. of items per 100 PUs | 6.2 (4.3, 7.8) | 6.0 (4.3, 7.9) | 0.2 (–0.9 to 0.6) |
| Cost (£) per 100 PUs | 8.2 (4.4,12.4) | 8.7 (5.2, 12.7) | –0.5 (–1.8 to 0.9) |
| Cost (£) per item | 1.2 (1.0, 1.6) | 1.3 (1.0, 1.7) | –0.1 (–0.2 to 0.1) |
| *Antidepressants* | | | |
| No. of items per 100 PUs | 3.3 (2.5, 4.3) | 3.5 (2.8, 4.3) | –0.2 (–0.5 to 0.2) |
| Cost (£) per 100 PUs | 22.1 (15.9, 28.9) | 21.8 (16.3, 28.0) | –0.3 (–2.5 to 3.1) |
| Cost (£) per item | 6.4 (5.4, 8.2) | 6.2 (5.2, 7.8) | 0.2 (–0.2 to 0.9) |
| *Analgesics* | | | |
| No. of items per 100 PUs | 10.9 (8.0, 16.2) | 11.5 (8.8, 14.6) | –0.6 (–1.4 to 1.2) |
| Cost (£) per 100 PUs | 29.2 (21.4, 39.4) | 28.5 (22.7, 37.1) | 0.7 (–3.0 to 3.4) |
| Cost (£) per item | 2.5 (2.0, 3.0) | 2.5 (2.1, 3.0) | 0 (–0.2 to 0.2) |
| *All CNS drugs* | | | |
| No. of items per 100 PUs | 26.4 (20.5, 35.0) | 27.3 (21.7, 33.7) | –0.9 (–3.0 to 2.0) |
| Cost (£) per 100 PUs | 97.5 (79.1, 117.4) | 95.6 (79.4, 114.7) | 1.9 (–7.2 to 8.3) |
| Cost (£) per item | 3.5 (3.0, 4.2) | 3.4 (3.0, 4.0) | 0.1 (–0.1 to 0.3) |
| *All non-CNS drugs* | | | |
| No. of items per 100 PUs | 121.8 (102.7, 148.6) | 123.6 (108.6, 146.5) | –1.8 (–10.1 to 4.8) |
| Cost (£) per 100 PUs | 931.2 (824.4, 1044.2) | 899.1 (806.0, 1006.8) | 32.1 (–16.7 to 70.2) |
| Cost (£) per item | 7.2 (6.6, 8.1) | 6.7 (6.5, 7.7) | 0.5 (0.1 to 0.6)* |

CI = confidence interval. CNS = central nervous system. Mann Whitney *U*-test of significance between practices with and without counsellor: *$P<0.05$.

**Table 3.** Drug prescription rates and costs as percentage of the respective family health services authority average in 126 practices with and 88 practices without an on-site counsellor.

| Drug group | Median % of average no./cost (25th, 75th centile) in practices | | Difference between medians (95% CI) |
|---|---|---|---|
| | With counsellor | Without counsellor | |
| *Anxiolytics/hypnotics* | | | |
| No. of items | 90 (66, 117) | 93 (75, 112) | −3 (−10 to 8) |
| Total cost | 85 (54, 123) | 82 (57, 118) | 3 (−12 to 11) |
| Cost per item | 89 (71, 113) | 87 (67, 113) | 2 (−8 to 9) |
| *Antidepressants* | | | |
| No. of items | 97 (80, 119) | 98 (81, 116) | −1 (−7 to 9) |
| Total cost | 95 (74, 128) | 91 (66, 113) | 4 (−5 to 15) |
| Cost per item | 99 (81, 119) | 92 (79, 115) | 7 (−3 to 13) |
| *Analgesics* | | | |
| No. of items | 93 (77, 115) | 93 (80, 104) | 0 (−6 to 8) |
| Total cost | 98 (76, 118) | 89 (77, 118) | 9 (−4 to 11) |
| Cost per item | 101 (88, 117) | 101 (86, 122) | 0 (−6 to 8) |
| *All CNS drugs* | | | |
| No. of items | 96 (82, 112) | 94 (84, 108) | 2 (−5 to 7) |
| Total cost | 99 (83, 114) | 95 (84, 111) | 4 (−4 to 8) |
| Cost per item | 102 (92, 122) | 101 (88, 117) | 1 (−2 to 9) |
| *All non-CNS drugs* | | | |
| No. of items | 97 (84, 107) | 96 (87, 106) | 1 (−5 to 4) |
| Total cost | 101 (92, 112) | 97 (90, 105) | 4 (−0 to 8) |
| Cost per item | 104 (96, 114) | 99 (92, 107) | 5 (1 to 8)** |

CI = confidence interval. CNS = central nervous system. Mann Whitney *U*-test of significance between practices with and without counsellor: **$P<0.01$.

manual class of population (Table 1). Not all data were available for all practices.

### *Psychotropic drug prescribing*

No significant differences were found between practices with and without counsellors in terms of the numbers of prescribed items, prescribing costs, or costs per item for any of the groups of psychotropic drugs examined or for central nervous system drugs as a whole. This was true whether figures were expressed as rates (number or cost of items per 100 prescribing units) (Table 2) or as percentages of the family health services authority average (Table 3). In addition, no significant differences in the prescribing indicators were found among practices grouped according to the number of hours of counselling provided per week per 1000 registered patients.

The confidence intervals about the differences in prescribing indicators between practices with and without counsellors were generally small (Tables 2 and 3). If the lower (or upper) limit of the confidence interval for an indicator is divided by the median value for practices without counsellors, the resulting fraction is below 16% for all indicators except one: cost per 100 prescribing units for anxiolytics/hypnotics. This means that the study was generally powerful enough to detect differences of 15% or more in prescribing rates and costs between practices with and without counsellors. Participant practices with counsellors were more likely than participant practices without counsellors to have patients in non-manual social classes and so might be expected to have lower prescribing rates and costs.[8] The analyses were therefore repeated after restricting the sample to those practices which had comparable proportions of manual and non-manual patients. There were again no significant differences between practices with and without counsellors in their psychotropic drug prescribing rates or costs.

Indices of prescribing were adjusted for a practice's number of prescribing units which gives patients aged 65 years or over a weighting factor of three relative to younger patients. Other investigators have suggested that the weighting factor for elderly patients should be four or five.[8,9] Although there were no significant differences between practices with and without counsellors in the proportions of patients aged 65 years or over, practices with counsellors did tend to have higher proportions of patients in this age group. As this may have led to an overestimate of the prescribing rates and costs for practices with counsellors, the data were analysed again, giving patients aged 65 years or over a weighting factor of 4.5. There were again no significant differences between practices with and without counsellors in their psychotropic drug prescribing rates or costs.

### *Non-central nervous system drug prescribing*

The possibility that non-central nervous system drug prescribing might be altered by the provision of on-site practice counsellors was also examined. No significant differences were found between practices with and without counsellors in terms of the numbers of items or overall costs of non-central nervous system drugs (Tables 2 and 3). However, the cost per item for non-central nervous system drugs was significantly higher (by approximately £0.50) in practices with counsellors than in practices without counsellors (Table 2). This difference was also significant when data were expressed as percentages of the family health services authority average (Table 3). The cost per non-central nervous system item showed a significant, but non-linear, association with the number of hours of counselling provided by practices per week per 1000 registered patients (Kruskal–Wallis one-way analysis of variance, $\chi^2 = 8.8$, $P<0.01$). Cost per item was highest in the 64 practices that provided low levels of counselling (median rank 125.2), intermediate in the 61 that provided

high levels of counselling (median rank 104.8) and lowest in the 88 that had no on-site counsellor (median rank 95.3).

## Discussion

The findings of this study suggest that general practice based counsellors have no appreciable impact on practice psychotropic drug prescribing rates or costs. No significant differences were found between practices with and without counsellors in terms of the numbers of prescription items, costs, or costs per item for any group of psychotropic drugs or for central nervous system drugs as a whole. It is, however, important to consider these findings within the overall limitations of the study design.

The low response rate (38%) raises the possibility that the sample was unrepresentative. A comparison of participant and non-participant practices with counsellors showed, however, that the sample was representative of those that had participated in the previous national survey where response rates above 80% were obtained. In addition, participant practices with and without counsellors were well matched for a wide range of characteristics including location, list size, proportion of elderly patients, training and fundholding status, and number of health promotion clinics. Nevertheless it is not certain that participants were representative in their prescribing behaviour, or that the only systematic difference between study and control practices lay in their employment, or not, of counsellors.

The study was sufficiently powerful to detect differences of 16% or more in prescribing rates and costs between practices with and without counsellors. Differences smaller than this may have gone undetected and could be important in judging the overall cost-effectiveness of counselling services in general practice.

The cost per item for non-central nervous system drugs was approximately £0.50 higher in practices with counsellors than in those without. Expressed in relation to the average for their family health services authority, the cost per item was 4% above average in practices with counsellors as compared to 1% below average in practices without counsellors. Why practices with counsellors should prescribe more costly non-central nervous system preparations than practices without counsellors cannot easily be explained. It seems unlikely that the association was causative given that the cost per item did not rise with increases in the number of hours of counselling provided per week per 1000 registered patients. The difference may have occurred by chance alone and would need to be confirmed by further investigation.

Why counsellors have no appreciable impact on psychotropic drug prescribing rates or costs is unclear. It may be that counsellors do reduce drug consumption by their patients but these patients constitute such a small proportion of the practice population that no overall effect on practice prescribing rates or costs can be discerned. Alternatively it may be that counselling is used in ways that prohibit any impact on prescribing, for example, as a supplement to drug treatment or for problems which are not amenable to drug treatment. Another consideration is that the quality of counselling services may not have been universally high, thus limiting any beneficial effect on prescribing. More indepth studies of individual counselling services are needed to investigate these hypotheses.

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