Abstract

Background: little is known about the factors that are associated with receipt of care in older people. This study aims to describe the pattern and predictors of service usage, by a representative sample of people aged 65 and over.

Method: we assessed psychiatric and physical morbidity, formal and informal care and prescribed medication by standardized questionnaires.

Results: 1085 people were interviewed at home. Having dementia was a negative predictor of GP and hospital consultation (both \( P < 0.001 \)). Depressed participants were most likely to consult with GPs (\( P < 0.05 \)); 13.1% were on antidepressants. People with dementia use health services less than their counterparts. The presence of co-resident informal caregivers predicts less use of social services but no increase in health consultations.

Conclusions: carers give compensatory care rather than act as bridges to link people with dementia with the health care system. People with dementia need advocates. Older people with depression are high users of all services. They remain under-treated pharmacologically.

Keywords: dementia, depression, formal and informal care, service usage

Introduction

Public policy promotes care for older people at home whenever possible; yet little is known about the socio-demographic and health factors which determine receipt of care. In the UK, dementia has been found to predict contact with the social services and depression with the health services, and a recovery from depression predicts a decrease in service usage [1, 2]. The diagnoses of anxiety, depression and dementia in older people are associated with high service costs although not necessarily appropriate management [3].

Three reports from the United States show, in contrast, that dementia is associated with increased use of both community health services and social services but no increase in visits to physicians [4]. Caregivers for people with dementia have high levels of knowledge about the availability of care although they do not always take it up [5]. There is evidence of compensatory care (where family support substitutes for formal care) and bridging (where the informal network helps link the older person to services) [6].

This present study aims (i) to describe the pattern and use of health services, social services and non-statutory services, by a representative sample of people aged 65 and over living in an inner London borough and (ii) to examine which factors predict use of services.

Method

This is part of a larger study which was approved by Camden and Islington Local Research Ethical Committee. Further methodological details are in an earlier paper [7].

Sample selection

A cross-sectional community survey was conducted of a representative sample of people aged 65 or older, living in Islington, in inner London, the sixth most deprived area in England and Wales [8]. To provide a sampling frame, enumeration districts were selected randomly, using computer-generated numbers. An introductory
letter was delivered to every address in the selected areas. The interviewer then visited each house to ask if an older person (aged 65 or over) lived there and to arrange an interview. If no one was in the researcher called again until the resident was located.

**The interview**

The interview schedules were as follows:

1. *The Client Service Receipt Inventory* (CSRI) was amended for use with older people [9]. This instrument collects information on formal and informal services received and other aspects relevant to a health economic study. Service usage over the previous three months was recorded from participant responses to the CSRI, and where applicable from carers’ reports. Data was thus obtained on the number of times a week each of a list of services was received including social workers, meals on wheels, day centres, home care, community nurses, outpatient appointments, consultations with a general practitioner, inpatient episodes and informal care.

2. The shortened version of the *Comprehensive Assessment and Referral Evaluation* (short-CARE; [10]) is a reliable and valid questionnaire with diagnostic scales for depression and for dementia. It also has a scale for activity limitation (designed to identify those who need significant help with day-to-day living).

3. Medication taken was recorded by report, in conjunction with direct examination by the interviewer of current supplies.

**Data analysis**

Diagnoses were reached using a hierarchical and mutually exclusive system [11]. Dementia was at the apex, followed by depression and then physical disability, defined in terms of activity limitation (AL) in the absence of psychiatric morbidity. Lastly, a well group was identified who did not suffer from dementia, depression or activity limitation.

Data on service usage in the three months before interview was categorized into the following services:

1. Health services: GP, community nurses (any community nurse service, including community psychiatric nursing), outpatients (any outpatient appointment), day hospital (attending any day hospital), inpatient (any inpatient admission).

2. Social service: social worker, home carer, meals on wheels, day care (lunch club or day centre). For this analysis we split the sample into those living in 24-hour residential facilities and others. This was because those in residential care would not require home care services or meals on wheels.

Data were analysed using SPSS 6.1. Chi-squared and Mann-Whitney tests were used; with odds ratio (OR) and 95% confidence intervals (CI). The numbers and percentage of services for each diagnostic group with 95% CI and relative risks (RR) were also calculated. A logistic regression analysis was performed to see which variables predicted use of services and psychotropic medication. The following independent variables were entered: depression, dementia, activity limitation, age, gender, living alone, part III accommodation (this term is used broadly and includes private residential/nursing home care), ethnic group, and years of education.

**Results**

**Demographic**

We approached 1289 people aged 65 or older with 1085 (84.1%) being interviewed. Age ranged from 65 to 102 years. Of those who agreed to interview, 441 (40.6%) were male and 644 (59.4%) were female, 561 (51.7%) lived alone and 54 lived in residential accommodation.

**Morbidity**

The proportions of subjects with specific psychiatric diagnoses or activity limitation are summarized in Table 1. One-hundred and seven (9.9%) had dementia, 167 (17.1%) had depression, 269 (33.2%) were activity limited and 542 (50%) were well. Those living in residential care were significantly more likely to have dementia (38, 70.4% *versus* 69, 6.7%; *P*<0.000, OR=33.1, 95% CI=17.6–62.4) or be activity limited (52, 96.3% *versus* 418, 40.5%; *P*<0.000, OR=11.5, 95% CI=2.5–52.3).

**The use of health services**

People with dementia were low users of health services (see Figure 1). They were less likely than those people without dementia to have consulted their GP (47/107, 44.3% *versus* 594/978, 60.7%; *P*<0.005, RR=0.5, 95% CI=0.3–0.9).

**Table 1. Hierarchical diagnoses according to accommodation type**

<table>
<thead>
<tr>
<th></th>
<th>Home (<em>n</em>=1031)</th>
<th></th>
<th>Residential (<em>n</em>=54)</th>
<th></th>
<th>Total (<em>n</em>=1085)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dementia</strong></td>
<td>n=69, 6.7% CI 5.2–8.4</td>
<td>n=38, 70.4% CI 56.4–82.0</td>
<td>n=107, 9.9% CI 8.2–11.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Depression</strong></td>
<td>n=164, 17.1% CI 14.7–19.6</td>
<td>n=3, 18.8% CI 4.0–45.7</td>
<td>n=167, 17.1% CI 14.8–19.6</td>
<td></td>
<td></td>
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</tr>
<tr>
<td><strong>Activity limitation</strong></td>
<td>n=258, 32.3% CI 29.1–35.7</td>
<td>n=11, 84.6% CI 54.6–98.1</td>
<td>n=269, 33.2% CI 29.9–36.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Well</strong></td>
<td>n=540, 52.4% CI 49.3–55.5</td>
<td>n=2, 3.7% CI 0.5–1.3</td>
<td>n=542, 50% CI 46.9–53.0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CI = 0.3–0.8), or had an outpatient appointment (27/107 25.5% versus 401/978, 41.0%; P < 0.005, RR = 0.5; 95% CI = 0.3–0.8). They were, however, more likely to have seen a community nurse (30/107, 28.0% versus 185/977, 18.9%; P < 0.005; RR = 1.7, 95% CI = 1.1–2.6).

Those with depression were high users of community medical services. Compared to those who were not depressed they were more likely to have seen a GP (119/167, 71.3% versus 522/818, 64.7%; P < 0.05, RR = 1.5, 95% CI = 1.2–2.0) or had an outpatient appointment (48/167, 29.7% versus 137/810; P < 0.000; RR = 2.0, 95% CI = 1.4–2.9).

Predictors of health service contact

In the logistic regression analysis, we found that AL, depression and having more years of education were predictors of GP consultation but people with dementia were less likely to consult their GP. Again, a diagnosis of dementia predicted less use of hospital service whereas AL predicted more use (see Table 2).

The use of social services by people living in their own homes

See Figure 3. People with dementia were the biggest users of all social services with 13 (18.8%) having seen a social worker. This compared to 25 (2.6%) of the rest (P < 0.001, RR = 8.6, 95% CI = 4.2–17.9). Similarly, they were more likely to have home care services (25, 36.2% versus 12, 17.4% P < 0.05; RR = 1.9, 95% CI = 1.2–3.1).

Table 2. Logistic regression analysis of predictors of service use and psychotropic medication

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Significant Predictor</th>
<th>Coefficient</th>
<th>P</th>
<th>Odds Ratio</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Practitioner</td>
<td>Depression</td>
<td>0.4</td>
<td>0.015</td>
<td>1.5</td>
<td>1.1–2.2</td>
</tr>
<tr>
<td></td>
<td>Activity limitation</td>
<td>0.4</td>
<td>0.003</td>
<td>1.5</td>
<td>1.2–2.0</td>
</tr>
<tr>
<td></td>
<td>Years of education</td>
<td>−0.3</td>
<td>0.028</td>
<td>0.8</td>
<td>0.6–1.0</td>
</tr>
<tr>
<td></td>
<td>Dementia</td>
<td>−1.2</td>
<td>0.000</td>
<td>0.3</td>
<td>0.2–0.5</td>
</tr>
<tr>
<td>Hospital medical services</td>
<td>Activity limitation</td>
<td>0.9</td>
<td>0.000</td>
<td>2.4</td>
<td>1.8–3.0</td>
</tr>
<tr>
<td></td>
<td>Dementia</td>
<td>−1.2</td>
<td>0.000</td>
<td>0.3</td>
<td>0.2–0.5</td>
</tr>
<tr>
<td>Social Services (not day care)</td>
<td>Activity limitation</td>
<td>2.4</td>
<td>0.000</td>
<td>11.0</td>
<td>6.7–17.9</td>
</tr>
<tr>
<td></td>
<td>Living alone</td>
<td>1.3</td>
<td>0.000</td>
<td>3.6</td>
<td>2.3–5.4</td>
</tr>
<tr>
<td></td>
<td>Dementia</td>
<td>0.6</td>
<td>0.045</td>
<td>1.8</td>
<td>1.0–3.1</td>
</tr>
<tr>
<td></td>
<td>Age (younger)</td>
<td>−0.6</td>
<td>0.009</td>
<td>0.6</td>
<td>0.4–0.9</td>
</tr>
<tr>
<td>Day Services</td>
<td>Dementia</td>
<td>1.3</td>
<td>0.001</td>
<td>3.5</td>
<td>1.7–7.2</td>
</tr>
<tr>
<td></td>
<td>Living alone</td>
<td>1.2</td>
<td>0.000</td>
<td>3.3</td>
<td>1.9–5.8</td>
</tr>
<tr>
<td></td>
<td>Depression</td>
<td>0.7</td>
<td>0.015</td>
<td>2.0</td>
<td>1.1–3.4</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>−0.8</td>
<td>0.012</td>
<td>1.3</td>
<td>1.2–3.3</td>
</tr>
<tr>
<td>Help from family</td>
<td>Activity limitation</td>
<td>1.8</td>
<td>0.000</td>
<td>5.9</td>
<td>4.4–8.0</td>
</tr>
<tr>
<td></td>
<td>Depression</td>
<td>0.5</td>
<td>0.009</td>
<td>1.6</td>
<td>1.1–2.3</td>
</tr>
<tr>
<td></td>
<td>Years of education</td>
<td>−0.3</td>
<td>0.034</td>
<td>0.7</td>
<td>0.5–1.0</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>−0.4</td>
<td>0.006</td>
<td>1.5</td>
<td>1.1–2.0</td>
</tr>
<tr>
<td>Psychotropic medication</td>
<td>Part III</td>
<td>0.9</td>
<td>0.000</td>
<td>2.6</td>
<td>1.8–3.6</td>
</tr>
<tr>
<td></td>
<td>Depression</td>
<td>0.8</td>
<td>0.002</td>
<td>2.2</td>
<td>1.3–3.7</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>−0.7</td>
<td>0.008</td>
<td>2.0</td>
<td>1.2–3.5</td>
</tr>
</tbody>
</table>

The Islington study

Those with AL were high users of health services compared to the remainder of the population. They were more likely to have seen the GP (174/269, 64.7% versus 467/816, 57.2%; P < 0.005, RR = 1.5, 95% CI = 1.1–2.0), seen a community nurse (69/269, 25.7% versus 68/541, 12.6%; P < 0.001, RR = 2.4, 95% CI = 1.7–3.5) had an inpatient admission (40/269, 14.9% versus 50/816, 6.1%; P < 0.0001, RR = 3.3, 95% CI = 1.8–4.9) and attended a day hospital (6/269, 2.2% versus 7/816, 0.8%; P < 0.05, RR = 4.1, 95% CI = 1.0–16.5). Those who were well used less of all medical services.
versus 108, 11.0%; \( P < 0.001, \text{RR} = 4.5, 95\% \text{CI} = 2.6–7.6 \), meals on wheels (9, 13.0%; \( P < 0.000, \text{RR} = 3.7, 95\% \text{CI} = 1.7–8.1 \) and day care (9, 13.2%; \( P < 0.05, \text{RR} = 2.5, 95\% \text{CI} = 1.2–5.2 \)).

Those with AL were also high users of social services, 13 (5.0%) saw a social worker (\( P < 0.001, \text{RR} = 4.7, 95\% \text{CI} = 1.8–12.5 \)). Similarly, they were more likely to have home care services (69, 26.0%; \( P < 0.0005, \text{RR} = 14.8, 95\% \text{CI} = 8.0–27.3 \), meals on wheels (27, 10.5%; \( P < 0.001, \text{RR} = 62.9, 95\% \text{CI} = 8.5–465.6 \)) and day care (19, 7.4%; \( P < 0.05, \text{RR} = 2.1, 95\% \text{CI} = 1.1–3.9 \)).

People with depression also were high users of home care services (26, 15.9%; \( P < 0.04, \text{RR} = 1.6, 95\% \text{CI} = 1.0–2.6 \) and day care (17, 10.4%, RR = 2.2; 95% CI = 1.3–4.1).

### Predictors of social services contact

See Table 3. Independent predictors of social services contact at home were dementia, activity limitation, living alone and being older.

Having a diagnosis of dementia, depression, living alone and being female all predicted increased use of day services.

### Use of social services by people living in residential care

Only one person in residential care had seen a social worker in the last three months. Six (15.0%) of those with dementia and 3 (27.3%) of those with AL went to day care.

### Psychotropic medication usage

See Table 3. People with dementia were more likely than other groups to be taking antipsychotics. People with depression were most likely to be prescribed both antidepressants and hypnotics/anxiolytics. Logistic regression analysis (see also Table 2) found that independent factors which predicted being prescribed psychotropic medication were living in residential accommodation and being female.

### Informal care

See Table 4. All four groups received substantial help from family and little from friends. People with dementia...
were most likely to receive help with hygiene. Informal carers were not usually paid for their help. Well people still received help from family and friends, but to a much lesser degree than the other three groups. Being female and having fewer years of education, depression and AL all independently predict receiving help from the family (see also Table 2).

Unmet need
There was very little self-perceived unmet need either in relation to formal or informal services. The most striking finding is that there was little unmet need, but a minority of all groups wanted more help from the chiropodist (ranging from 8.5% of the well group to 18.2% of those with AL). The only other service mentioned by more than 5% of people in any group was the home care service, which ranged from 1.5% of those who were well to 9.3% of those with AL.

Discussion
This study has found that different morbidities are associated with distinct patterns of service use. It has a high response rate in a community sample. The instruments used to measure the psychiatric disorders have been shown to have satisfactory validity and reliability, so the numbers generated can be accepted with some confidence. The results may thus be taken to have implications for other similar populations. We found, however, that respondents were unsure of the speciality of the health professional they had seen or ward they had been admitted to and thus have not been able to describe the pattern of psychiatric services according to need.

People with dementia
People with dementia receive high levels of social services at home and are also more likely to live in 24-hour staffed institutions. They use relatively less medical services, and this does not appear to be affected by the presence of a caregiver in the house. As a group, people with dementia have significant physical co-morbidity and vulnerability to the effect of other illnesses. Their lack of use of medical services may be explained by their being unable to voice their needs. This suggests that there would be a valuable role for a specialist advocacy service for those with dementia.

People with depression
People with depression access health services and are the highest users of primary care. GP and hospital doctors are therefore seeing those patients, but still undertreating depression in pharmacological terms. This is a particular problem because depression in the community is not only distressing and predictive of high service usage but often persists without treatment, particularly when it is more severe or associated with anxiety [12]. Recent meta-analysis and systematic reviews have shown the efficacy of pharmacological treatment of depression in older people [13, 14] and recovery might be expected to reduce service usage [2].

Informal care
Many people receive informal help from those outside the home and this is overwhelmingly provided by relatives and is unpaid. Living alone was an independent predictor of receiving help from both social services and informal care outside the home. Caregivers for people with dementia and depression, therefore, appear to be giving compensatory care and there is no evidence of bridging.

Health service usage
Years of education can be thought of as a proxy measurement of social classes in an older population where most people are retired. Other studies have shown that better health is linked with higher social classes. In this sample, increased education is linked to higher health care usage independent of pathology.

Unmet need
Surprisingly, there was little self-perceived unmet need, indicating either that needs are being met effectively or that people are not aware what help might be useful.

Conclusion
In this population, people with dementia use health services less than their counterparts without dementia, despite being older and frequently having comorbid illnesses. The presence of co-resident informal caregivers predicts less use of social services but no increase in health services consultations. Caregivers therefore act as providers of compensatory care rather than as bridges to link people with dementia with the health care system. People with dementia need advocates to act as their voices. Older people with depression are high users of all services. They remain under-treated pharmacologically.

Key points
- People with dementia use health services less than their counterparts without dementia.
- The presence of co-resident informal caregivers predicts less use of social services but no increase in health service consultations. Carers give compensatory care but do not link people with dementia with the health care system. People with dementia need advocates to act as their voices.
- Older people with depression are high users of all services. They remain undertreated pharmacologically.
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Limitations

- Respondents were unsure as to the speciality of the nurse or doctor they had seen or admission ward.
- We have not been able to describe and contrast the pattern of use of psychiatric according to need.
- The results may only apply to similar populations.

References


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