Prevalence of psychiatric disorder and the need for psychiatric care in Northern Ireland

Population study in the District of Derry

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Background This is the first report on the epidemiology of psychiatric disorders and needs for psychiatric treatment in the District of Derry, Northern Ireland.

Aims To assess the prevalence of psychiatric disorder and the needs for treatment in the general population of Derry.

Method The sample was drawn at random with a two-phase design using the General Health Questionnaire (GHQ–28) during the first phase, and the Schedules for Clinical Assessment in Neuropsychiatry (SCAN) with the Needs for Care Assessment (NFCAS–C) in the second phase.

Results The second phase ($n=307$) gave a weighted 1-month prevalence of hierarchically ordered ICD–10 psychiatric disorders of 7.5% and a 1-year prevalence of 12.2%. The equivalent prevalences for depressive disorders were 2.4% and 6.0%, respectively, and those for anxiety states were 3.5% and 3.7%. Only a quarter of needs for treatment were met, with the situation being better for depression than for anxiety.

Conclusions The rates of psychiatric disorder in Derry were even higher than those reported by a similar survey in inner London. This almost certainly reflects the very high levels of social deprivation in the District. Needs for treatment were often unmet.

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Most epidemiological studies of mental ill health have focused on symptomatic and diagnostic prevalence rates. However, credible data on prevalence are only a first step towards establishing the needs for psychiatric treatment and service. These are not just determined from psychiatric symptoms but from associated features, such as the overall course of symptom development and impaired social performance. Prevalence is thus only an approximate guide. This paper describes the first in-depth study of psychiatric morbidity in Northern Ireland, a community that has experienced 30 years of civil conflict. Its purpose is to report the prevalence of psychiatric disorder and the needs for treatment in the general population, aged 18 to 64, of the District of Derry. In addition to the civil conflict, the social deprivation experienced by many members of the community is among the worst in Western Europe with, for example, male unemployment at around 37% (Evason, 1985; Evason *et al*, 1989). This combination of the 'Troubles' and social deprivation makes Derry a test-bed for the relationship between adverse social environments, deprivation and mental illness. Moreover, this makes it important to establish needs for services, as they may be higher than in other cities of this size.

METHOD

Sample

Sampling was based on the electoral roll for the District of Derry. Systematic random sampling was carried out in two phases. In the first instance, 1156 people were chosen by selecting one name in 56 from each ward. In the second-phase, an over-sample was constructed for specific districts by choosing a further one in 56 names from these areas. This yielded a further 86 people, giving a total of 1242. The over-sampled areas were chosen because their particular socio-economic characteristics permitted more detailed analysis of the interactions between psychiatric morbidity and social deprivation, social isolation and exposure to violence. The areas are described in the appendix.

Procedure

All those selected were sent an explanatory letter, accompanied by the General Health Questionnaire (GHQ–28; Goldberg & Hillier, 1979), together with a questionnaire covering basic socio-demographic information. Up to three postal reminders were sent, followed, if necessary, by up to three visits to the person's address before the attempt to make contact was abandoned.

Returned GHQ–28s were scored using the 0,0,1,1 scoring method, with a score of 5 or more taken to indicate possible cases (Goldberg & Hillier, 1979). Interviews were sought with all participants aged less than 65 who scored 5 or more on the GHQ–28, and with one in five respondents who scored below the cut-off. If no reply was received, up to two postal reminders were sent, followed by up to three visits to the subject's address.

Participants were interviewed in their own homes using the Schedules for Clinical Assessment in Neuropsychiatry (SCAN Version 1.0; World Health Organization, 1992*a*), which incorporates the 10th edition of the Present State Examination. The CATEGO–V algorithm was used to generate diagnoses according to ICD–10 (World Health Organization, 1992*b*) and DSM–III–R (American Psychiatric Association, 1987). The interview allows ratings which relate to two separate periods. In the current study, the 'present state' was taken as the month before interview. Symptoms that had been present in the previous year but were either no longer present or not as severe, were rated as a separate 'representative episode'.

The community version of the Medical Research Council Needs for Care Assessment (NFCAS–C) was used (Bebbington *et al*, 1996; Lesage *et al*, 1996). This was also used in the Camberwell Needs for Care Survey in south London (Bebbington *et al*, 1997). Evaluations were based on information from SCAN, the MRC Social Role Performance Schedule (SRPS; Hurry *et al*, 1983) and the List of Threatening Events (LTE; Brugha *et al*, 1985). The LTE provided information for the distinction

between depressive disorder and adjustment reactions. All treatment received was logged and attitudes towards treatment recorded. Participants were assessed by the NFCAS–C procedure in order to establish their need status if they fulfilled the diagnostic criteria either of ICD–10 or of DSM–III–R, or if they were receiving treatment with psychotropic medication. This procedure takes account of the potential mismatch between diagnostic criteria and clinical judgements of treatment need.

The judgements of needs for care were made by clinicians following a case presentation, as described by Bebbington et al (1997). Needs for care were determined in each of seven areas of clinical functioning by comparing the actual items of care provided with an ideal model of what those items of care should be, in the context of well-organised primary care and psychiatric services. A need status was established for each episode of disorder requiring care and treatment, with each being allocated to the categories 'met need', 'unmet need' or 'unmeetable need'. It was also possible to rate an over-provision, usually when treatment had been continued long after an underlying condition had improved.

The data were collected from February 1993 to September 1994, by P.McC., a post-membership trainee with 5 years' psychiatric experience, and S.H., a psychologist with 3 years' clinical and research experience in mental health. The period of data collection overlapped the date of the first Peace Agreement in Northern Ireland.

Training in the use of instruments

P.McC. receiving training in SCAN from P.B., in the Social Role Performance Schedule (SRPS) from Dr Jane Hurry, and in the NFCAS–C from Professor Chris Brewin. S.H. was formally trained in SCAN, but was trained in the use of the SRPS and the NFCAS–C by P.McC. In order to enhance interrater reliability, the research psychologist involved in the Camberwell Needs for Care Study (L. Marsden), observed three interviews. Ratings on SCAN, the SRPS, the LTE and the NFCAS–C were discussed with L. Marsden and P.B., using these and other cases. Similarly, S.H. observed P.McC. conduct several subject interviews before being supervised herself.

Weighting and prevalence estimation

Calculation of prevalence and of confidence intervals poses problems in two-phase designs (Dunn et al, 1999). Probability weights were attributed to the second-phase participants to account for the over-sampling and for the chance under-representation of the age groups 18–24 and 25–44. The response rate per electoral ward for both the first postal phase and the second interview phase was also used in weighting. The SVY…commands in STATA version 6 (StataCorp, 1999) were used to calculate weighted prevalence rates, as they can allow for stratified and clustered sampling and provide robust estimates of the 95% confidence intervals.

RESULTS

Sampling

Details of sampling are given in Table 1. To obtain the high level of response (87.6%) in the first phase, a total of 367 visits were made to the home addresses of 216 participants. All 304 respondents scoring above threshold on the GHQ–28 were approached and 227 (74.7%) consented to be interviewed (Table 2). Eighty (65.6%) of the 123 selected participants who were below threshold agreed to be interviewed, making a total of 307 interviewees. There were no statistically significant differences in gender, age, marital status, employment or socio-economic group between those who consented to the second-phase interview and those who declined.

Socio-demographic characteristics of the sample

In comparison with the enumerated population of the city, males, especially those aged 25–44 years, were under-represented, while females were over-represented in the 25–44 and 45–64 age groups. Both genders were under-represented in the 18–24 age group and over-represented in the 45–64 age group. Females exhibited higher response rates than males in all age groups. In the second-phase sample, there was a relative loss of participants aged between 18 and 25, but otherwise there was little change in the age distribution. Relatively more unemployed participants, both male and female, were willing to take part in the interview.

The samples reflected the high rates of unemployment and poverty in the Derry area. Annual income was under £3000 for 19% of participants and between £3000 and £5000 for a further 24%. Social security benefits were received by 51.5%, and 32.2% of participants lived in households solely dependent on benefits. Nearly half lived in local authority housing and 15.3% lived in overcrowded conditions, as defined by more than one person per room. One-third had no access to a car and nearly one-fifth had no telephone.

Prevalence of ICD–10 disorder

Prevalence of ICD–10 disorder is presented hierarchically, such that each subject has been given a single primary diagnosis. The hierarchy is represented by the same sequence in which the disorders are listed in Table 3 and is equivalent to that used

Table I Response to General Health Questionnaire (GHQ) mailing (n=1242)

Response to GHQ mailing	n	%
Refused	102	(8.2)
Failed to contact	17	(1.4)
Moved	33	(2.7)
Deceased	2	(0.1)
Returned[1]	1088	(87.6)
Valid[2]	923	(74.3)

1. 46.3% males.
2. 161 returned GHQs invalid as respondents were aged >65 years; 4 returned GHQs invalid for other reasons.

Table 2 Response to invitation to Schedules for Clinical Assessment in Neuropsychiatry (SCAN) interview (n=923)

Stratum	Score $\geqslant 5$[1]	Score < 5[2]
	n	n
Invited for SCAN interview	304	123[3]
Refused SCAN	65	37
Failed to contact	12	6
Interviewed (%)	227 (74.7)	80 (65.6)
SCAN cases (past month)	67	1
SCAN cases (past year)	90	2

1. n=304 (32.9%).
2. n=619 (67.1%).
3. 1 in 5 selected from respondents.

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Table 3 Hierarchical prevalence of ICD–10 disorders

Prevalence	1-month			1-year		
	n	Weighted %	95% CI	*n*	Weighted %	95% CI
Diagnosis						
Vascular dementia	1	0.12	0–0.4	1	0.12	0–0.4
Schizophrenia	0	0.00	–	3	0.43	0–1.0
Bipolar disorder	0	0.00	–	1	0.15	0–0.5
Severe depressive episode	3	0.40	0–1.0	3	0.40	0–1.0
Moderate depressive episode	5	0.71	0.2–1.2	12	1.70	0.8–2.6
Panic	17	2.44	1.3–3.6	17	2.44	1.3–3.6
Mild depressive episode	9	1.23	0.5–2.0	23	3.94	1.6–6.3
Agoraphobia	4	0.56	0–1.3	5	0.68	0–1.4
Specific phobia	1	0.15	0–0.5	1	0.15	0–0.5
Generalised anxiety disorder	1	0.15	0–0.5	1	0.15	0–0.5
Post-traumatic stress disorder	1	0.15	0–0.5	1	0.12	0–0.5
Adjustment disorder	0	0.00	–	1	0.15	0–0.4
All depressive episodes	17	2.35	1.4–3.3	38	6.04	3.1–9.0
All anxiety disorders	24	3.45	1.6–6.3	26	3.70	1.5–5.9
Alchol dependence	9	1.27	0.5–2.1	10	1.42	0.5–2.4
Drug dependence	2	0.31	0–0.9	2	0.31	0–0.9
Total	53	7.50	6.6–9.3	81	12.18	8.0–16.4

in the first British National Survey of Psychiatric Morbidity (Jenkins *et al*, 1997*a*). The overall 1-month prevalence rate was 7.5% (95% CI 6.6–9.3) and the 1-year prevalence was 12.2% (95% CI 8.0–16.4).

Three participants with schizophrenia were identified through earlier symptoms, recorded under 'representative episode'. Two had a history of more than one psychotic episode and were attending their local community mental health team. One had residual symptoms of a previously diagnosed psychotic episode but was neither on medication nor attending services, despite comorbid agoraphobia. The subject with bipolar disorder was also identified from a 'representative episode'.

There was an inevitable delay in obtaining respondents' agreement for an interview, especially when failure of postal reminders required a personal follow-up home visit. Some respondents, especially those with a depressive episode, had consequently improved by the time of interview.

Table 4 gives the distribution by gender for the total prevalence figures and groups of disorders. Given the wide confidence intervals, none of the male/female differences was significant. There was, nevertheless, an appreciable gender difference in the total morbidity rates for 1-year prevalence (females 14.4%, males 9.1%), giving a ratio of 1.6 to 1. This difference was much less marked with the 1-month total morbidity rates (7.8% females *v.* 7.1% males). Depressive illness was considerably more common in females than in males, particularly in the 1-year prevalence rates (female:male ratio 3.1:1). The higher overall 1-year prevalence in women was mainly due to this excess of depressive episodes.

Anxiety disorders were also more common in females (6.7%) than in males (4.3%), giving a gender ratio of 1.6:1. Only two additional anxiety disorder cases, both females, were identified when the previous year was assessed. This implies that the anxiety disorders encountered were typically persistent, much more so than depressive disorders.

Needs for care

The needs for care of our participants are presented in two ways. The first analysis is based on identified treatment needs: it was possible for a given subject to have more than one episode of disorder within the year of assessment and, indeed, for treatment needs to be identified in more than one area of functioning. Each identified need can be described in terms of whether it is met, unmet or unmeetable.

The needs analysis was also carried out at the level of the individual subject, allowing the prevalence of needs for treatment to be calculated. In this case, there has to be a rule for collapsing separate episodes of disorder and areas of functioning. We adopted the principle that if a subject had some needs met and others unmet, they should be recorded as having an unmet need. However, met needs were rated in preference to 'no meetable need'. 'Unmeetable need' indicates that a dysfunction has been

Table 4 Prevalence by gender

Prevalence	1-month				1-year			
	Total	Depression	Anxiety	Substance misuse	Total	Depression	Anxiety	Substance misuse
Male								
n	21	4	11	9	31	7	11	10
Weighted %	7.1	1.7	2.1	3.0	9.1	2.7	2.4	3.4
95% CI	4.2–11.8	0.6–4.4	0.9–4.8	1.5–6.1	6.0–13.6	1.2–5.8	1.1–5.4	1.7–6.7
Female								
n	32	13	22	2	61	29	24	2
Weighted %	7.8	2.8	4.4	0.5	14.4	8.5	4.7	0.5
95% CI	4.2–14.1	1.5–5.2	2.1–9.2	0–4.0	8.7–22.9	4.5–15.5	2.1–9.9	0–4.0

Table 5 Identified needs for care

Needs status	Care episodes			Individuals requiring treatment n (weighted %)	
	Current	Past year	Total	1-month prevalence	1-year prevalence
Met need	15	18	33	14 (2.1)	25 (3.6)
Unmet need	28	5	33	22 (2.9)	27 (3.6)
No meetable need	39	8	47	32 (5.3)	40 (7.2)
Total	82	31	113	68 (10.3)	92 (14.4)

Table 6 Treatment needs for anxiety and depression

Needs status	Prevalence of individuals requiring care	
	Depression n (weighted %)	Anxiety n (weighted %)
Met need	23 (3.4)	5 (0.7)
Unmet need	11 (1.4)	21 (2.9)
No meetable need	11 (2.3)	22 (3.9)
Total	45 (7.1)	48 (7.5)

recorded but that there is some barrier to treating it – either there is no effective treatment, or the client rejects the proposed treatment.

The results of these analyses are presented in Tables 5 and 6. The overall 1-month weighted prevalences of participants requiring treatment were 10.3% (all needs) and 2.1% (met needs), while the 1-year equivalents were 14.4% and 3.6%, respectively. Of participants who actually attended medical services, only half had their needs met. Notably, few treatment needs were met for anxiety (Table 6). The emerging conclusion must be that services were failing to treat these disorders adequately.

Fourteen people judged to require treatment for anxiety had not received simple advice on anxiety management despite presenting to their family doctor, and the seven who were given advice but failed to respond had not been referred to secondary services for further therapy. General practitioners perhaps refer patients with anxiety only if it is severely disabling. A large number of participants with panic and other anxiety disorders were unaware of the availability of psychological therapy. Many had not returned to their own doctor after the initial assessment, as they were concerned that the only treatment was with benzodiazepines and they feared addiction.

Nine participants judged to require treatment for depression had not been offered advice or support or antidepressant medication, despite presenting to their family doctor. Twelve participants (27%) with depression thought they had not been given adequate opportunity to discuss their problems.

There was frequent non-presentation or non-compliance by those with alcohol or drug problems. This is likely to be an inherent element of the disorder, rather than a phenomenon peculiar to a Northern Ireland population.

Most over-provision was related to benzodiazepine use. However, it was reassuring that there was absolute over-provision in only two participants, that is they now exhibited such minor symptoms that benzodiazepines could have been withdrawn.

DISCUSSION

Limitations of the study

The instruments used in the study are well established. However, this inevitably reduced sample size, resulting in wide confidence limits for the quoted prevalences. The information from individual subjects was obtained by a single researcher, raising the possibility of bias. One-month prevalence may have been underestimated because of an inevitable delay between receipt of the GHQ and the follow-up interview: the mean interval was nearly 10 weeks, with a median of 8 weeks (range 1–34 weeks).

Prevalence of psychiatric disorders

In the present study, 7.5% of the population aged 18–64 was estimated to have a psychiatric disorder over 1 month. The 1-year prevalence was 12.2%. Depressive disorders and anxiety disorders formed the large majority, accounting for 89% of all disorders, if substance misuse was excluded. Substance misuse was the third most common condition, with a 1.6% 1-year prevalence.

These prevalence rates are in the middle range of published results, but few community surveys have used the SCAN/ICD–10 combination. In general, the evidence suggests that prevalences established through clinical interviews tend to be lower than those derived from questionnaires completed by lay interviewers (Anthony et al, 1985; Romanoski et al, 1992; Brugha et al, 2001).

The most appropriate comparison of prevalence is with recent British studies (Meltzer et al, 1995; Bebbington et al, 1997; Jenkins et al, 1997a; Singleton et al, 2001) and with the Irish data from the European Outcome of Depression International Network (ODIN) study (Ayuso-Mateos et al, 2001). The prevalence of depressive episode in the first British National Survey of Psychiatric Morbidity was 2.1% and in the second it was 2.9%. This compares with 2.4% in Derry. However, the methods used in the national surveys over-identify depression in comparison with SCAN (Brugha et al, 1999) and the Derry value seems likely to be genuinely greater than the UK average. The 1-year prevalence of 0.4% for functional psychosis in the first national survey (Jenkins et al, 1997b) and of 0.5% in the second survey (Singleton et al, 2001) is very similar to the 0.43% prevalence identified in the current study, although little can be made of this, given the very few cases this represents in Derry.

In Derry, depressive disorders were over three times as common in females than males, while anxiety disorders were around twice as common in females. The British National Survey (Jenkins et al, 1997b) reported a female:male ratio in 1-week prevalence of 1.5:1 for depressive disorders,

and 1.3:1 for anxiety disorders. The 1-year prevalence of substance misuse in Derry was seven times as great in males as in females, compared with a three-fold difference in the national survey. Thus, the commonly found gender ratios appear to be increased in the Derry survey.

The ODIN study (Ayuso-Mateos *et al*, 2001) included centres in urban Dublin and rural County Laois, both in the Irish republic. The design used SCAN in a second phase. Depressive episode had a strikingly high prevalence in Dublin (8.9%), while even in County Laois, the prevalence was 6.2%. The results from the ODIN study vary dramatically between sites and the very high prevalences in some areas have never been seen elsewhere using SCAN.

For the Camberwell study, Bebbington *et al* (1997) employed essentially the same methods as the current survey. The weighted 1-month prevalence of hierarchically ordered ICD–10 disorders was 6.2% excluding sleep disorders, with a 1-year prevalence of 9.2%. Alcohol and drug dependence were identified more frequently in the Derry survey (1.8%) than in the Camberwell survey (1.0%), but both rates are low. SCAN generally results in lower prevalences of substance misuse than with other instruments. It is striking that the 1-month and 1-year prevalences of psychiatric disorder in Derry were not appreciably different from a deprived inner-city area of London.

Needs for care

The estimated 1-year prevalence of needs for psychiatric treatment in the general population was 14.4%, compared with the 1-year overall prevalence rate of psychiatric disorder (12.2%). The prevalence of anxiety states currently judged to require treatment was particularly high, at 7.2%. The construction of a single primary diagnosis involved giving preference to depression over anxiety disorders and would account for some of this discrepancy.

Needs for care were met in 29% of care episodes, the same proportion of needs were unmet, while needs were unmeetable (because of non-presentation or non-compliance) in 42% of episodes. The needs of half of the 66 episodes involving meetable needs had been met. These distributions of need status were identical when the analysis was based on individual cases. While 71% of the meetable needs for

depression had been met, only 19% of those relating to anxiety were met. Thus, anxiety disorders were under-treated, even though they were often long-standing.

The Camberwell Needs for Care Survey (Bebbington *et al*, 1997) reported that the 1-month prevalence of participants requiring treatment (all needs) was 10.8% and the 1-year prevalence was 12.0%. These results are therefore close to those in the Derry study and, again, the weighted prevalences of 'participants requiring treatment' was higher than the 1-month and 1-year prevalences of psychiatric disorder actually identified by SCAN. A similar proportion of needs relating to care episodes had been met in the two studies, but unmet needs were lower in Derry (29% compared to 54% in Camberwell), while the level of unmeetable need was 42% in Derry but only 14% in Camberwell. A considerable part of the differences in the ratio of unmet and unmeetable needs arises from a difference in method: in Derry it was assumed that participants who did not seek treatment all had unmeetable needs, whereas

in Camberwell further questions were asked about the hypothetical acceptability of treatment.

In both Camberwell and Derry, there appears to be better provision of treatment for depression than for anxiety. Anxiety disorders were more chronic in course than depressive episodes, were less likely to come to the attention of services, and were also particularly likely to be under-treated.

The reluctance of people to present themselves for treatment suggests that they require education and encouragement to do so. The scale of the problem is confirmed in the National Survey of Psychiatric Morbidity (Bebbington *et al*, 2000*a*,*b*).

CLINICAL IMPLICATIONS

■ The prevalence of common mental disorders in a small city in Northern Ireland with high levels of social deprivation may be as high as in the inner-city area of Camberwell (London).

■ Few needs for treatment of common mental disorders were met.

■ The provision of treatment for anxiety disorders was worse than for depressive disorders.

LIMITATIONS

■ The second-phase sample was small and confidence limits were correspondingly wide.

■ Most individual disorders were represented by few cases.

■ The study relied on self-report for accounts of treatment sought and given.

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assistance of the many members of the local community who participated in the study.

APPENDIX

The over-sampled areas

Area A is on the Waterside part of the city. It is a public sector housing estate around 20 years old. It is housing in low demand with a high incidence of single-parent families and high unemployment. It is a mixed area, with a 3:2 Protestant:Catholic ratio, but has not been directly exposed to the 'Troubles'.

Area B is a small public housing estate about 5 miles north-west from the centre of the city. In religious terms it is a mixed area. It has high levels of social deprivation and, in addition, has been very troubled by violence. In particular, the only way in or out of the estate is past a security check-point where a car bomb killed five soldiers and one civilian just before this survey.

Area C is an exclusively Protestant enclave close to the city centre with very much a siege mentality and fairly high levels of deprivation.

Area D is a very large estate, well known in the media because of its long history of violent incidents. It is almost completely Catholic in composition. It is now relatively well established but still lacks amenities and has high levels of social deprivation.

Each of these over-sampled areas was defined reasonably easily in terms of streets, so that the electoral roll could still be used as the sampling frame.

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