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ORIGINAL PAPER

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Patterns of mental health service utilisation in Italy and Spain

An investigation using the European Service Mapping Schedule

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Abstract *Background* Methods for comparing local mental health service systems are needed to allow identification of different patterns of service provision and of inequities within and between countries. *Aim* The aim of this study was to describe and compare mental health service systems in 13 catchment areas in Spain and Italy. Within each country, a range of area characteristics was represented. *Method* The European Service Mapping Schedule (ESMS) and European Socio-Demographic Schedule (ESDS) were used to describe: (i) socio-demographic and geographical area characteristics; (ii) services provided; and (iii) service utilisation in each area. *Results* Great differences emerged in patterns of service provision and use between and within countries. In contrast to Northern Europe, high unemployment rates were not associated with high service utilisation rates, but areas with large numbers of single-person households tended to have high service use. Most service utilisation rates were substantially below those reported from Northern European studies. Spanish centres tended to have low rates of hospital service utilisation despite limited development of community-based services. Trieste, where there has been a strong emphasis on developing innovative community services, showed a distinctive pattern with low hospital bed use and high rates of day service use and of contacts in the community. *Conclusion* This methodology yielded useful data, which raise significant questions regarding equity and the implementation of mental health policy. The very large variations indicate that underlying local patterns of service provision must be investigated and taken into account in the interpretation of research evaluations of interventions.

Key words mental health services – service utilisation – service comparison – European Mapping Schedule – socio-demographic factors

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Introduction

The World Health Organisation (WHO) has identified a need for comprehensive surveys and standardised international comparisons of mental health service provision (WHO 2001a). In Europe, international studies of mental health care provision are relevant to investigation of the extent of inequities within the European Union and how these may be reduced, as well as to assessment of needs for development of the health care systems of Eastern Europe. Empirical assessment of service systems is also required to allow investigation of how far policies of mental health services reform, such as the move towards community-based care advocated in many countries, have been implemented in practice. In addition, comparison of mental health care systems between areas is important for research, providing a context for understanding why outcomes from evaluations of apparently similar interventions may differ between areas and countries (Burns and Priebe 1996).

The Matrix Model developed by Tansella and Thornicroft (1998) defines a framework for theoretical discussions and practical investigations of mental health services. Applying this framework, service systems are considered in terms of three geographical levels, the individual, the local and the national, and three temporal phases, which are inputs, processes and outcomes. As Tansella and Thornicroft argue, the main focus of most mental health services research was, until recently, on outcomes at the individual level.

While their potential value has been recognised, the difficulties encountered in trying to develop standardised and internationally valid methods for assessing and comparing services are considerable (Johnson et al. 1998). A number of investigations of differences between countries in mental health care inputs and processes at local catchment area level have been published in the last decade (Gater et al. 1995; Sytema et al. 1996; Sytema and Burgess 1999; Salize et al.1999). These provide interesting accounts of differences in patterns of care between areas whose services have different organisational structures, histories and social and policy contexts. However, they have generally been confined to comparisons between just one catchment area in each country. Whilst the authors of these studies have sought to obtain data which are as comparable as possible between centres, they have not used fully standardised and generalisable methods for describing service organisation and utilisation. For example, Gater and colleagues describe a structured method for assessing the number of patients using day hospitals in each centre, but they do not give a fully operationalised definition of a day hospital. This restricts the generalisability of their methods, as there are substantial variations between and within European countries in the organisation and function of services which are called day hospitals.

Two larger-scale service mapping exercises have recently been carried out. Glover and Barnes (2004) publish on the internet a regularly updated mapping of all services in England. Their categorisation of services is based on clear definitions, but categories are selected for their relevance to the current English policy context rather than for international generalisability. The WHO Atlas of Mental Health Resources in the World Services outstrips other work on service organisation and utilisation in its global scope, but the geographical level at which mental healthcare systems are investigated is national rather than local and descriptions are simple and broad (WHO 2001b). The validity and reliability of data supplied to the Atlas are unknown.

In developing the European Service Mapping Schedule (ESMS), the European Psychiatric Care Assessment Team (EPCAT) aimed to make available a feasible and internationally valid instrument for standardised description of the range of services provided and levels of use of these services within a local catchment area (Johnson et al. 2000). In terms of Tansella and Thornicroft's Matrix Model, it addresses inputs and processes at a local level, and is intended to be applicable throughout Europe. Subsequent to initial field trials by the instrument's developers (Munizza et al. 1999a, 1999b, 2000; Romero 2000; Salvador-Carulla et al. 2000), two other research groups have published reports on application of the instrument. Böcker et al. (2001) used it to investigate mental health services in each of the 24 districts of Sachsen-Anhalt in former East Germany. They reported that use of the instrument was feasible, inter-rater reliability appeared high, and comparisons with other sources indicated good validity. Their results demonstrated that the policy of psychiatric reform had not yet been implemented as intended in East Germany. Becker et al. (2002) investigated services in five urban catchment areas in different countries that participated in the Epsilon Study, finding marked variations in organisation of services and pattern of use. They reported that collection of the full data set required by the instrument demanded considerable effort, with particular difficulties in obtaining comparable data from all centres regarding outpatient and community services.

The present study applies the ESMS, together with the brief European Social-Demographic Schedule (ESDS) (Beecham et al. 2000), to a diverse sample of areas in Italy and Spain. Our aims are: (a) to examine further the usefulness and applicability of these instruments; (b) to explore differences in patterns of care between and within the two countries, each of which has experienced a programme of psychiatric reform aimed at deinstitutionalisation; and (c) to explore ecological relationships between socio-demographic characteristics and service utilisation.

In both countries, the goal of psychiatric reform has been closure of large asylums and a shift of service provision towards community settings. Some national level information is available on mental health service provision in each country. The WHO Atlas suggests some similarities between Spanish and Italian mental health systems. Both have a mental health policy based on advocacy, prevention, treatment and rehabilitation, and each also has specific mental health legislation. Comparable proportions of the Gross Domestic Product are spent on health in each country (9.3 % in Italy and 8 % in Spain), mental health services in both are primarily funded from taxes, and both are described as having a network of community care services for the mentally ill in place. However, some indication that there may be important differences between the countries is given by figures on total numbers of psychiatrists (9 per 100,000 in Italy and 3.6 in Spain), psychologists (3 per 100,000 in Italy and 1.9 in Spain) and psychiatric nurses (26 per 100,000 in Italy and 4.2 in Spain). A recent review of the progress of psychiatric reform in Italy since its origins in 1978 (Burti 2001) reports that psychiatric reform in Italy has essentially been a success with a comprehensive network of community services now available across the country, resulting in declining rates of psychiatric admission, including compulsory admission. Burti believes that a significant disparity in quantity and quality of services between northern and southern regions is still present, but has diminished since the 1980s. In a companion paper, Vázquez-Barquero and colleagues (2001) reviewed the progress of the psychiatric reform in Spain. This was instituted in the early 1980s, when catchment areas for mental health provision were defined, and a new law stipulated that in each area in-patient services should operate as part of an integrated network with a full range of community-based services. This has resulted in a national network of around 550 community mental health centres, though with consid-

erable regional variations in resources. However, examination of national and regional data suggests that admission rates to short-stay in-patient facilities were not diminishing in the 1990s. Data available to Vázquez-Barquero et al. regarding day and community residential services were limited, but suggested that there were fewer facilities available than in other European countries.

Thus, whilst policies of psychiatric reform have been pursued in both countries over the past 20 years, investigations at a national level suggest differences in how much progress has been made in implementing these. The present study allowed us to explore how much service organisation and utilisation at a local level reflect this and how far service provision varies within as well as between the two countries.

Subjects and methods

Selection of catchment areas

The level of investigation in this study was the local mental health service catchment area. Selection of areas was partly purposive, encompassing urban and rural and northern and southern areas in each country, as well as areas characterised by varying degrees of social deprivation. Identification of willing local participants was also a factor in area selection. Trieste, where 24-h community mental health centres are a central service component, was included because of its distinctive place at the forefront of development of community-based services and opposition to traditional institutional services (Mezzina and Vidoni 1995).

Measures

Description of catchment area

The European Socio-Demographic Schedule (ESDS) was used along with some qualitative data to describe the socio-demographic characteristics of each area (Beecham et al. 2000). Variables were selected for inclusion in the ESDS on the basis of availability of data in a range of EU countries and evidence of relevance to mental health service utilisation. It has been used for area comparison between several EU countries (Beecham et al. 2000).

Mapping of services and measurement of service utilisation

The ESMS was used to map services and measure utilisation in each area. Its development, principles and content have been described by Johnson et al. (2000). It contains four sections: (A) Introductory questions; (B) the Service Mapping Tree, which allows the mental health services of a catchment area to be classified according to their main functions; (C) the Service Counting Tree, which measures service use; and (D) the Service Inventory, which elicits detailed listing of the characteristics of services identified in each area, including staffing. This paper focuses on data from section C. The three main categories of service provision on which the instrument is based are residential (including in-patient), day and structured activity, and community and out-patient. Utilisation of residential services is measured in terms of the mean number of occupied beds calculated over a 1-month period. For acute day care, mean number of attenders per day measured over 1 month is calculated and, for emergency care, number of contacts in the course of 1 month. Utilisation of continuing care services (both day and structured activity, and out-patient and community) is measured in terms of total number of service users. Figures per 100,000 catchment area inhabitants are calculated for all parameters. The instrument includes detailed operational definitions of all terms used.

Inter-rater reliability for assigning services to categories was found by the developers of the instrument to be good (Johnson et al. 2000), and initial trials led by members of the EPCAT group suggested that its use was feasible, although routine data needed to be supplemented with information on utilisation collected specifically for the purpose of completing the ESMS (the guiding principle is that it should be possible to collect all required data that are not available from routine sources by carrying out a 1-month census of service use in the catchment area) (Munizza et al. 1999a, 1999b; Romero 2000; Salvador-Carulla et al. 1999). Spanish and Italian versions of the English original have been produced following a conceptual back-translation procedure and their feasibility, reliability and descriptive validity are discussed by Munizza et al. (2000) and Salvador-Carulla et al. (2000). English, Spanish and Italian versions are available from the authors.

For the mapping, mental health services were operationally defined as "facilities with a separate budget which have as a specific aim some aspect of the management of mental illness and of the clinical and social difficulties related to it". Services included were those whose target population consisted of adults of working age (18–65 years) and which were part of or worked according to service agreements with the public service network in each country. Services were included if they were located outside the catchment area, but routinely provided care for patients within the area (e. g. a psychiatric hospital which, in spite of being outside a catchment area, routinely admits patients from the area). Specific services for learning disabilities, substance misuse and children and adolescents or old people were not included, nor were services whose exclusive purpose was provision of counselling or psychotherapy. Self-help services were included in the mapping in Spain, but not in Italy, and are, therefore, excluded from the comparisons in this paper. Data collection regarding secure services was abandoned as it proved too difficult to link patients in secure facilities with their catchment areas of origin.

Procedure

Training courses in the use of the ESDS and ESMS were provided in both Italy and Spain. One researcher from Italy (ES) attended the Spanish training course and a Spanish researcher (LS) was involved in the Italian study. Five trained researchers in Italy and six in Spain conducted the assessments. Two meetings per year were scheduled for coordination of the international study.

For the ESDS, socio-demographic data were obtained from several sources. In Spain, these included the Instituto Nacional de Estadística, the Consejo Económico y Social and a number of other regional and national data sources (Romero 2000). The Istituto Nazionale di Statistica and other local and regional statistical agencies provided the information in Italy.

Data collection for the ESMS began in each area with a face-to-face interview with the head of the community mental health centre. A map of the services within the area meeting criteria for inclusion was made at this meeting and major local data sources identified. Further information was then obtained from managers and staff of other services. Routinely collected data were used as far as possible for the sections on service utilisation. Where there were gaps, a 1-month census of utilisation of the relevant services was organised under the guidance of the researcher. The data were all collected in 1998 or 1999.

Analysis

Simple correlations were used to explore whether variations in service use might be explicable in terms of areas' socio-demographic characteristics. Correlations were calculated between socio-demographic indicators and: (i) acute hospital bed use; (ii) total hospital bed use; (iii) total community bed use; (iv) total day service use; and (v) total out-patient and continuing care service use.

Results

Area characteristics

Table 1 shows the main characteristics of each area. As intended, the areas show considerable diversity, although only three (Pomigliano d'Arco in the Naples area, Catania in Sicily and Loja, Andalucia) belong to the region of their country usually classified for socio-economic comparisons as southern. The most recent local plan for psychiatric reform had been fully implemented in all areas except Madrid. Proportion of women employed outside the home is quoted rather than female unemployment rate, as it appears the more significant statistic in the context of the high proportions of women in all areas (ranging between 61.5% in Bolzano and 73.5% in Naples) who are classified as 'economically inactive' rather than as unemployed. The female employment rates shown in Table 1 are substantially lower than those of more northerly countries of the European Union, contrasting, for example, with a female employment rate of 69% in the UK (Women and Equality Unit 2001).

Spectrum of services available

Some service types were available almost everywhere, appearing to constitute a core configuration of catchment area services. These were:

- acute hospital care,
- residential services outside hospital with 24-h staffing
- day care services providing structured activities other than work
- non-mobile 24-h emergency services (i.e. services which carry out assessments at health services premises rather than routinely travelling to patients' homes)
- non-mobile continuing care services (services which monitor and treat patients who attend mental health service premises, including out-patient clinics).

For other service types, availability varied considerably both between areas and between countries. Most Italian areas were characterised by a fairly broad range of services, but with variations in whether areas had acute residential services outside hospital (such as beds in community mental health centres), acute day services which could admit patients in an emergency, 24-h mobile emergency services and community residential services with less than 24-h staffing.

All the Spanish areas had acute hospital services, day services providing structured activity other than work, 24-h non-mobile emergency services and non-mobile continuing care services. There were no residential services providing acute care outside hospital and no 24-h mobile emergency services, but acute day services were identified in three areas. Provision of mobile care services was very limited in the Spanish centres apart from the provision of a mobile emergency service in office hours in Madrid, whereas all Italian centres had a mobile emergency service during office hours and some mobile continuing care service provision.

In-patient and residential service use

Table 2 depicts levels of residential service utilisation (including hospital beds) in the 13 areas. Variation was very great: reported hospital bed use for Turin was 7.6 times that for Loja in rural Andalusia (in Trieste, where bed use may in fact have been lowest, it was unfortunately not possible to ascertain what proportion of the potentially available beds in the university clinic were being used by residents of the catchment area at the time of the study). The range for community bed use was wider still, from 2.2 beds used in Barcelona to 92.7 beds per 100,000 in Como. Country means for acute hospital bed use (6.7–7.3 per 100,000 in Italy, depending where the true value for Trieste lies, and 5.5 per 100,000 in Spain) and for total hospital bed use (11.4–11.9 for Italy and 8.9 for Spain) were fairly similar. In keeping with Italian psychiatric reform law, no use was reported of indefinite stay hospital beds in Italy, whereas such beds were in use, albeit at a low level, in the Spanish areas where large psychiatric hospitals are still open (Madrid and Barcelona). Pre-admission addresses for long-stay in-patients in these hospitals were checked for the study in order to identify those originating from the study catchment area. However, a caveat regarding the Spain data is that previous address could not always be clearly established for those who had been resident in these hospitals for many years, some of whom may thus have been missed. Use of community beds was far greater in Italy, with a mean of 42.2 per 100,000 (standard deviation 27.7) compared with 2.6 per 100,000 (standard deviation 4.6) in Spain. The two Italian centres with lowest use of community beds, Catania and Naples, were those in the south, but each used more such beds than any Spanish area.

Community service use

Table 3 indicates that the range of rates of use was also very great for day services. Acute day services, which admit patients in psychiatric emergencies, had between 0 and 12.8 service users per day, calculated as the mean number of service users present on any working day over a period of a month. Total use of non-acute day services varied between 9.4 per 100,000 in Catania and 257.1 per 100,000 in Trieste, measured as the number who used these services at any time during a month's census period. As with residential service use, Trieste was an outlier, but all Northern Italian centres had day service use rates substantially exceeding those for all

Table 1 Characteristics of catchment areas (data from European Socio-Demographic Schedule)

Area (Region)	Population size (density[1])	Character	% working age males unemployed[2]	% working age females employed	% single, divorced or widowed	% lone parents	% single-person households	No. of people/1,000 born abroad	% under 15 or over 65 years
Italy									
Bolzano (Centro-sud) (Trentino-Alto Adige)	205,071 (134)	Mixed rural and urban	2.6	36.3	51.7	4.5	30.3	25	49.1
Como (Lombardy)	290,558 (733)	Mixed rural and urban	1.7	31.9	51.0	7.9	25.2	20	46.3
Novi Ligure Piedmont	142,226 (94)	Rural	5.9	32.5	40.3	0.33	34.9	17	58.3
Genoa (sector 4) Liguria	161,140 (3,872)	Metropolitan	5.2	26.5	42.3	missing	39.1	17	59.5
Turin (sector 2) Piedmont	235,668 (14,775)	Metropolitan	4.1	22.2	41.0	1.03	34.4	19	50.0
Naples (Pomigliano d'Arco) Campania	194,538 (1,168)	Mixed rural and urban	20.1	11.8	54.7	missing	13.8	8	45.7
Rome (sector B) Lazio	187,961 (3,839)	Metropolitan	11.0	24.9	49.3	3.4	28.2	47	46.8
Trieste Friuli-Venezia Giulia	249,212 (1,181)	Urban	3.9	29.4	38.9	7.3	38.2	31	55.5
Catania Sicily	232,505	Urban	14.7	16.2	53.4	7.3	21.4	12	50.1
Spain									
Burlada Navarra	66,350 (38)	Mixed rural and urban	5.4	27.7	54.4	1.0	18.5	27	45.3
Barcelona (Gava) Catalonia	150,921 (1,207)	Metropolitan	8.2	20.9	50.2	1.8	16.7	49	36.6
Loja Andalucia	61,141 (35)	Rural	21.9	missing	50.7	0.9	21.6	11	55.2
Madrid (Salamanca)	142,091 (28,418)	Metropolitan	9.9	28.5	58.1	1.0	28.1	86	53.2

[1] Population density is measured in inhabitants per km^2
[2] Data on employment relate to adults of working age

Table 2 Utilisation of in-patient and other residential services

	Acute residential services Beds occupied/100,000			Non-acute residential services Beds occupied/100,000						Total hospital beds in use 100.000	Total community beds in use 100.000	Proportion of all beds which are in community
	Hospital	Non-hospital	Proportion of occupied acute beds which are in community	Hospital		Non-hospital			Proportion of occupied non-acute beds which are in community			
				Length of stay		Level of support						
				Time limited	Indefinite stay	24-hour	Daily	Limited				
Bolzano	9.7	0.5	5%	0.5	0	17.1	16.1	0	99%	10.2	33.7	77%
Como	7.7	0	0%	1.5	0	88.6	0.8	3.3	98%	9.2	92.7	91%
Novi Ligure	8.3	0	0%	3.5	0	16.1	0	0	82%	11.6	16.1	58%
Genoa	16.7	0	0%	0	0	64.5	0	0	100%	16.7	64.5	79%
Turin	4.2	0	0%	17.0	0	48.7	0	1.7	75%	21.2	50.4	70%
Naples	3.1	2.6	46%	7.8	0	1.5	0	15.4	68%	11.1	15.9	59%
Rome	5.3	0	0%	11.7	0	12.7	7.8	4.5	68%	17	25	60%
Trieste	0.8–5.6[1]	10.1	64%–93%[1]	0	0	14.5	32.6	9.2	100%	0.8–5.63	66.4	92–99%
Catania	4.7	0	0%	0	0	11.2	0	4.3	100%	4.7	15.5	77%
Burlada	11.2	0	0%	0	0	5.4	0	0	100%	11.2	5.4	33%
Barcelona	3.6	0	0%	4.4	2.2	0	2.2	0	25%	10.2	2.2	18%
Loja	2.8	0	0%	0	0	6.4	1.6	0	100%	2.8	8.0	74%
Madrid	4.3	0	0%	0.7	6.4	3.2	0	0	31%	11.4	3.2	22%

[1] A range rather than an exact figure is given here because data could not be obtained for bed occupancy in the local university clinic, where 12 acute beds may be used by residents of the area; 0.8 would be an accurate figure if none of these beds were in use for catchment area residents at the time of data collection, 5.6 if all were in use. The working assumption is made in calculating correlations between bed use and demographic indicators that all were in use

Spanish centres, although Naples and Catania fell within or below the Spanish range. Areas varied considerably in proportion of day service users who were engaged in work-related activities, with Naples and three of the Spanish centres reporting no such service provision. There was also great diversity in the extent to which people attended day facilities simply for support and social contact as opposed to engaging in a programme of structured activity, with Trieste reporting far higher rates than other centres.

Table 3 also shows mobile (outside mental health service premises, usually in patients' homes) and non-mobile emergency contacts during a month's data collection. When total number of emergency contacts is calculated, the range, though considerable, is somewhat narrower than for the other categories so far discussed, from 16.0 per 100,000 emergency contacts over a month in Loja to 99.5 in Turin, with substantial overlap between Italy and Spain. There were very large variations in the proportion of contacts taking place outside usual office hours, with all the Italian centres reporting more emergency assessments within office hours and all the Spanish centres more outside office hours. The proportion of contacts classified as mobile also varied greatly, although in every area the majority of emergency contacts were on health service premises. Whilst in Spain only one centre reported any community-based emergency contacts, all Italian centres reported such contacts and in Trieste and Naples more than a third of emergency contacts took place outside health services premises.

With regard to out-patient and community contacts for continuing care, total number of users of such services ranged from 374.6 per 100,000 in Naples to 1,676.6 in Burlada, with ranges for Italy and Spain again overlapping. Service users were defined as 'mobile' if they had had at least one contact with staff outside mental health services premises in the past month, and as higher intensity service users if they had at some stage in the past month had at least three contacts with staff in the space of a week (excluding day service attendance). There were again great variations in the proportion of service users who had had at least one contact with staff outside mental health services and were, thus, classified as mobile continuing care service users. Very little mobile continuing care provision was taking place in the Spanish centres, whereas Trieste had particularly high rates of such provision. Naples and Rome in Italy and Loja, Barcelona and Madrid in Spain were characterised by rates of higher intensity continuing care service provision markedly below the rest.

Service use and area characteristics

Table 4 shows the results of calculating Pearson's product-moment correlations for the relationship between six socio-demographic indicators and some summary indicators of levels of service provision. These must be interpreted with caution, given their exploratory nature

Table 3 Utilisation of day and other community services

	Day and structured activity services (all figures: users/100,000 population)				Emergency out-patient and community (all figures: contacts per month per 100,000)					Continuing care out-patient and community (all figures: service users/100,000 population)				
	Acute (mean users/day)	Non-acute (users attending at least once in 1-month period)			Mobile[1]		Non-mobile		Proportion of emergency contacts outside health services premises	Mobile[2]		Non-mobile		Proportion of users seen outside health service premises
										Contact intensity		Contact intensity		
		Work and work-related	Other structured activity	Social contact only	Office hours	Out of hours	Office hours	Out of hours		Higher[3]	Lower	Higher	Lower	
Bolzano	2.4	34.0	3.4	2.4	12.7	0	28.3	4.9	28%	18.5	44.9	32.2	572.9	9%
Como	0.7	8.1	22.8	0	1.1	0	26.8	10.3	3%	31.0[4]		20.0	159.3	15%
Novi Ligure	4.2	28.0	38.4	0	10.4	8.3	40.0	19.7	24%	26.0	96.3	100.5	255.2	26%
Genoa	0	5.6	21.7	1.2	19.2	0	36.0	13.0	28%	20.5	104.9	39.7	435.1	21%
Turin	0	4.5	38	27.5	20.8	4.5	47.9	26.3	25%	31.0	134.9	168.9	661.0	17%
Naples	2.1	0	6.7	4.1	6.7	4.1	11.8	3.6	41%	2.1	43.2	14.9	287.4	13%
Rome	0	missing	23.9	0	4.8	0	26.1[4]		16%	4.8	70.7	18.6	684.6	10%
Trieste	12.8	70.2	50.0	136.9	14.7	0	23.3	0[5]	39%	73.9	134.9	30.1	301.5	39%
Catania	2.2	4.7	3.4	1.3	6.9	3.0	28.4	26.2	16%	3.4	45.6	138.9	404.7	8%
Burlada	4.8	11.2	3.2	0	0	0	20.9	47.0	0%	0	1.6	53.0	1622.0	0%
Barcelona	3.2	0	19.3	0	0	0	22.1	40.0	0%	2.2	20.2	14.8	580.7	4%
Loja	0	0	13.0	0	0	0	6.4	9.6	0%	0	0	0	652.9	0%
Madrid	3.7	0	11.7	0	21.1	0	3.2	32.4	37%	0	0	9.2	600.3	0%

[1] *Mobile* emergency contacts, according to *ESMS* definitions, are those which take place outside health services premises
[2] *Mobile* continuing care service users are those who have had at least one contact outside mental health services premises in the past month
[3] *Higher intensity* continuing care service users are those who, in the past month, have had at least three contacts during a single week (day and residential service use not included)
[4] Cells are merged for these categories because disaggregated data could not be obtained
[5] Does not include patients with acute problems who may drop into the community mental health centres in Trieste, which are open throughout the night

Table 4 Correlations between socio-demographic variables and service use variables

Service use variable	Correlations with:					
	Male unemployment rate	Female employment rate	% of single-person households	Population density	% aged under 15 or over 65	% born abroad
Acute bed use	−0.55 (p = 0.05)	0.49 (p = 0.11)	0.45 (p = 0.12)	−0.23 (p = 0.47)	0.36 (p = 0.22)	−0.19 (p = 0.54)
Total hospital bed use	−0.39 (p = 0.19)	−0.022 (p = 0.95)	0.36 (p = 0.23)	0.36 (p = 0.24)	−0.04 (p = 0.90)	0.15 (p = 0.62)
Total community bed use	−0.57 (p = 0.04)	0.34 (p = 0.28)	0.56 (p = 0.046)	−0.15 (0.65)	0.25 (p = 0.42)	−0.29 (p = 0.34)
Total number of continuing care day service users	−0.39 (0.21)	0.29 (p = 0.39)	0.60 (p = 0.039)	−0.12 (p = 0.72)	0.33 (p = 0.30)	−0.01 (p = 0.97)
Total number of out-patient and community continuing care service users	−0.16 (p = 0.61)	0.05 (p = 0.88)	−0.11 (p = 0.73)	0.05 (p = 0.88)	−0.17 (p = 0.58)	0.08 (p = 0.79)

and the purposive basis of sampling, but they summarise trends which are evident on visual inspection of the data in Tables 1, 2 and 3. They suggest a tendency for levels of use of most of the main forms of service to be higher in areas with lower male unemployment, reaching statistical significance for acute bed use and community bed use, for which higher levels were also associated with a higher proportion of the single-person households in the area.

Discussion

Limitations

While use of the ESMS meant that measurements were standardised and definitions operationalised to a greater degree than in previous work, several limitations need to be noted. Selection of areas within each country was not random and was based to some extent on convenience as well as a purposive principle. Data were collected at various times during a 2-year period rather than, as would have been desirable, during the same month in every centre, though major holiday periods were avoided. Only a single month's service use was assessed, so that the extent to which patterns within centres fluctuate over time is unknown. Although independent researchers were involved, mapping of services and calculations of service utilisation were based partly on routine data and information supplied by local service managers and clinicians, introducing possible inaccuracies and bias in reporting. Finally, as has been described in the results section, some data remained missing or uncertain in spite of researchers' intensive efforts. Despite these limitations to the data collection procedure, many of the differences found between catchment areas are so large as to be very unlikely to be artefacts.

In terms of feasibility, most of the information on residential (including in-patient) and day service use was relatively easy to obtain from routine data or staff reports. However, more difficulties were encountered in collecting data on out-patient and continuing care service use. For this aspect of service use, extra data collection was usually required to supplement routine data. Even where local information systems included some data collection on out-patient and community services, formats in which these data were collected were rarely fully compatible with one another or with the ESMS. The planned inclusion of local 1-month censuses to supplement routine data collection is likely to be one reason why use of the ESMS appears to have gone more smoothly in the present study than in that described by Becker et al. (2002). Other factors identified in our study as important for full completion of the instrument were good collaborative relationships with local service managers and clinicians in each area and researchers who have had substantial training in the use of the ESMS and have several weeks of dedicated time for data collection in each catchment area. However, whilst use of the instrument appeared generally feasible in our study, there is clearly scope for producing a simplified version of the ESMS, particularly with respect to collection of data on out-patient and community services.

There were also some uncertainties which researchers were unable to resolve despite intensive efforts. In particular, in areas where long-stay psychiatric beds are still open, such as Catalonia, it was not possible to be confident that all long-standing in-patients who originated from the study catchment area were identified.

Spain and Italy in international context

Even though there are wide variations between the centres in our study, as discussed below, utilisation of residential and day care services is lower in almost all of them than in the Northern European centres where the instrument has been applied (Böcker et al. 2001; Becker et al. 2002). For example, Becker and colleagues reported total hospital bed use of 51 per 100,000 population in suburban London, 117 per 100,000 in Amsterdam and 261 per 100,000 in Copenhagen. Thus, the rate reported for Turin, where bed use was highest in our study, was 42% of the London rate and less than 8% of that for Copenhagen. Day service use ranged from 221 per

100,000 in Amsterdam to 426 per 100,000 in suburban London, so that only Trieste, an outlier in our study, falls within this Northern European range. However, for total numbers of users of any type of out-patient or community continuing care service, the range in the Northern European centres (between 736 per 100,000 in Amsterdam and 1,258 per 100,000 in Copenhagen) fell within the range in our study. These comparisons are limited by the fact that Becker and colleagues investigated only one area per country, all metropolitan; investigation involving a larger range of Northern European centres would be of interest.

Variations between study areas

Equity is a multidimensional concept encompassing a series of factors, including availability, accessibility and consumption of services (López-Casasnovas 2000). Horizontal equity refers to the extent to which similar patients access and use similar services, while vertical equity refers to the extent to which the service availability and utilisation varies between different patient groups, defined, for example, by diagnosis, severity or chronicity. The present study is relevant to assessment of horizontal equity, comparing service availability and utilisation in areas from two Southern European countries which have substantial similarities in social structure and mental health policies. Despite these apparent similarities, the variations found both in quantity and pattern of service provision are very wide, both within Italy and between the two countries, raising questions regarding horizontal equity and progress towards reform of the psychiatric system.

Whilst none of the catchment areas investigated relied heavily on long-stay hospital beds, the extent to which care provision had shifted towards community settings varied greatly. Less care was provided outside mental health service premises in the Spanish areas. A psychiatric patient in three of the four Spanish areas had no opportunity to be assessed at home in crisis. Most continuing care was of low intensity and involved patients attending health services premises for appointments rather than home visits and other *in vivo* contacts. Patients in Spain were also less likely than those in Italy to have access to a range of community-based residential programmes with varying characteristics or to supported work schemes. At this local level of analysis, our data confirm the doubts expressed by Vázquez-Barquero et al. (2001) about the extent of implementation of psychiatric reform programmes in Spain.

Even though community-based provision is limited, patients in the Spanish centres did not appear to be using more acute beds than those in Italian centres, so that differences between the two countries in patterns of use cannot be explained in terms of community alternatives substituting for hospital care in Italy. Our findings contribute to interpretation of the unexpectedly low costs of psychiatric treatment for schizophrenia in Spain compared with other European countries (Haro et al. 1998; Chisholm et al. 2000; Knapp et al. 2002). They raise the possibility of under-funding in Spanish mental health services, although it cannot be clearly established from these data whether low levels of provision in Spain reflect unmet needs, low levels of need or a combination of both. Evidence which may shed some light on this question comes from a comparison by Salize et al. (1999) between service use and needs for care in Mannheim, Germany and Granada, Spain. They found much higher levels of service use in Mannheim than Granada. Needs status was similar for symptoms and problematic social behaviour, but there was some evidence for more unmet needs related to skills and abilities in Granada. These data are limited by the fact that only one centre in each country is involved. However, they suggest that the low levels of service provision reported in Spain may be adequate for management of major symptoms of mental illness and socially disruptive behaviours, but that patients might benefit from more rehabilitative continuing care than currently available. Mapping local services has the potential to contribute substantially to the understanding of results from studies at an individual level of variations in needs and costs.

Within Italy, a broader range of services was available in each area, and in most cases care was to a greater extent community-based than in Spain, suggesting more extensive implementation of mental health service reform policies. Large variations nonetheless emerged within Italy in levels of service utilisation and in the extent to which care was community-based. The two Southern Italian centres, Naples and Catania, were towards the lower end of the range for many forms of care. Again, our data do not allow us to evaluate fully how far variations within Italy reflect lack of equity and how far they may be based on real variations between areas in service users' needs; further investigation is needed of the relationship between service use and morbidity in these areas and whether low levels of utilisation reflect unmet needs or needs met through mechanisms other than mental health services.

Relationship with socio-demographic indicators

Ecological investigations in the UK, the Netherlands and Germany have found a strong relationship between acute bed use and indicators of social deprivation such as unemployment rate, particularly for psychotic illnesses (Kammerling and O'Connor 1993; Harrison et al. 1997; Ramsay et al. 1997; Löffler and Häfner 1999; Peen and Dekker 2001). No such relationship was found in the present study, and, indeed, there was evidence that less deprived areas tended to have higher utilisation of acute and community beds, a trend reflecting the combination of high unemployment rates and low service utilisation in Spanish and Southern Italian centres. This may indicate a lack of equity, with more prosperous areas finding more resources for mental health service provision.

However, it may also be that in a Southern European context other demographic and cultural variables modify the relationship between poverty and unemployment and need for mental health services. Proportion of the population born abroad appeared unrelated to service use, perhaps because no area had a very large immigrant population.

There has been very little previous investigation outside Northern Europe of the relationship between psychiatric service use and socio-demographic indicators, and, even in Northern Europe, most studies are confined to use of acute beds. One study which does suggest that findings which are robust in Northern Europe may not be replicable everywhere is the investigation of the relationship between deprivation and service use in two Northern Italian areas reported by Thornicroft et al. (1993). They found that admission rates for schizophrenia were highly correlated with social deprivation in urban Verona, but in rural Portogruaro there was no evidence of such a relationship. They suggested that, whilst in urban areas poverty tends to be associated with social isolation and poor housing, the rural poor in Northern Italy who become mentally ill may receive high levels of family support, protecting them from admission. A similar explanation could be put forward for our findings. The Southern Italian and Spanish areas that we studied had high unemployment rates, but also high proportions of women remaining in the home and low proportions of single-person households, even in urban areas. This may increase the availability of informal care and reduce utilisation of mental health services, although we have no evidence as to how fully informal care meets needs, for example, for rehabilitative care. Another possible explanation for low rates of service utilisation in some areas is that mentally ill people may tend to migrate away from areas with a very limited range of services, particularly if appropriate long-term residential placements are not available.

Trieste

Within Italy, Trieste emerges as an outlier on several measures, suggesting that it has indeed developed a distinctive mental health care system. This system is characterised by very high rates of community bed use and of day service use and a tendency to provide emergency and continuing care services in community settings to a greater extent than other Italian areas. Acute bed use could not be precisely established, but appeared to be at the low end of the Northern Italian range.

Relevance to mental health services research

These findings are relevant for research as well as service planning. In addition to raising important questions about determinants of needs for services and of service use, they confirm Burns and Priebe's (1996) argument that variations in patterns of mental health service provision are too great to be ignored in the evaluation of innovative services. For example, one would not expect the introduction of an intervention aimed at reducing hospital bed use, such as a mobile crisis team, to have the same effect in all the catchment areas discussed, given the great variations in initial bed use and extent to which services are already provided in community settings.

Conclusions

Our study demonstrates the feasibility of standardised comparison of mental health service inputs and processes at a local level and the potential usefulness of the data this yields, both in service planning and research. Examination of service availability and utilisation at local level allows better understanding of observations made at national level and at individual level. Given the small number of catchment areas investigated and the lack of assessment of individual needs, this study has raised more questions than can easily be answered, and larger scale and repeated application of these methods would be informative. However, the complexity of mental health service description and limitations of local information systems are such that well-trained dedicated researchers are required for use of the ESMS, and some data are difficult to obtain and interpret even with such researchers.

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