

The EUNOMIA project on coercion in psychiatry: study design and preliminary data

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Previous national research has shown significant variation in several aspects of coercive treatment measures in psychiatry. The EUNOMIA project, an international study funded by the European Commission, aims to assess the clinical practice of these measures and their outcomes. Its naturalistic and epidemiological design is being implemented at 13 centres in 12 European countries. This article describes the design of the study and provides preliminary data on the catchment areas, staff, available facilities and modalities of care at the participating centres.

Key words: Coercion, involuntary admission, inpatient treatment

Coercive treatment in psychiatry – including the admission to a psychiatric hospital or ward on a legally involuntary basis as well as the administration of measures such as seclusion, restraint and forced medication – remains an understudied issue (1-3). The only replicated finding in this highly sensitive area is the significant cross-national variation concerning aspects such as provisions in mental health legislations and rates of involuntary admissions to psychiatric hospitals (3,4). Regarding the latter, the various European countries differ by a factor of nearly 20, and most countries report currently increasing rates (5,6). Furthermore, as repeatedly pointed out by patients' organizations as well as at the political level (7), no European guidelines or standards of good practice concerning coercive treatment measures have been established, either from the legal or the clinical viewpoint (3,8).

This situation conflicts with an important general goal of the European Union: standardizing health care opportunities and living conditions for the citizens in the individual member states. On the other hand, the increasing focus, during the past decade, on consumers' perspectives in mental health care (9) has contributed to produce a growing concern that coercive measures in psychiatry may entail unnecessary infringements of patients' rights (10).

Given this complex background, the European Commission is currently funding the project "European Evaluation of Coercion in Psychiatry and Harmonization of Best Clinical Practice" (acronym: EUNOMIA), within its Fifth Framework Programme of Research. As its main objective, this project will analyse the existing cross-national variation in coercive psychiatric treatment, its influencing factors and its outcomes.

The project is being conducted at 13 centres in 12 European countries. The research questions are the following:

1. What are the socio-demographic and clinical characteristics of legally involuntarily admitted patients and of voluntarily admitted patients who feel coerced to admission?
2. How frequent (and intense) is the perceived coercion in patients legally voluntarily and legally involuntarily admitted to hospitals?
3. What coercive treatment measures are applied to these two groups of patients?
4. What is the medium-term outcome for these two groups of patients?
5. What are the baseline predictors of a more or less favourable medium-term outcome in the two groups of patients?
6. What is the international variation in questions 1 through 5?

This article describes the design of the study and provides preliminary data on the catchment areas, staff, available facilities and modalities of care at the participating centres.

METHODS

The study is carried out at 13 centres in 12 European countries: Dresden, Germany; Sofia, Bulgaria; Prague, Czech Republic; Thessaloniki, Greece; Tel Aviv, Israel; Naples, Italy; Vilnius, Lithuania; Wrocław, Poland; Michalovce, Slovak Republic; Granada and Malaga, Spain; Örebro, Sweden; and East London, UK. Each centre is expected to recruit 250 legally involuntarily admitted patients who are between 18 and 65 years of age, and able to give informed consent. Patients who are assigned to this group have experienced coercive measures during hospital admission, as defined by country-specific legislation. To identify the second study group in each centre, a randomly selected sub-sample of at least 375 patients voluntarily admitted to the wards admitting the legally involuntary patients are screened according to

their subjective experience of feeling coerced to admission, using the Perceived Coercion Scale from the MacArthur Admission Experience Survey. Patients reporting perceived coercion in three or more out of the five questions in this instrument are asked to participate in the study.

Each patient is assessed at three time points: within the first seven days after admission (t1), at 4 weeks (t2), and at 3 months (t3) after admission, independent of his/her current living situation (Table 1). The assessment includes documentation of coercive measures, defined as follows. Seclusion is the involuntary placement of an individual alone in a locked room, which may be set up especially for this purpose. Restraint is the fixation of at least one of the patient's limbs by a mechanical appliance or at least one limb being held by staff for greater than 15 minutes. Forced medication refers to activities which use restraint or high psychological pressure (involving at least three staff members) to administer medication against the patient's will. Involuntary detention is defined by any of the following criteria: a) the patient was initially admitted on a legally voluntary basis and withdraws his consent to hospitalization at a later stage; b) the legally defined time period (different between countries) in which the hospital is allowed to initially detain a patient without applying for a decision of the responsible legal authorities has passed; c) the detention is

based on the authorization of legal authorities.

The characteristics of the participating centres are assessed by the following instruments: a) the European Socio-Demographic Schedule (ESDS, 11), to evaluate the socio-demographic characteristics of the catchment area; b) the European Service Mapping Schedule (ESMS Version 3, 12) for the standardized description and classification of established mental health services; c) an instrument for the standardized assessment of structural/organizational characteristics of hospitals (13); d) the International Classification of Mental Health Care (ICMHC, 14) for the description of mental health care interventions in the acute wards of the hospitals.

Twelve team members, one from each participating centre, attended a special training session in Thessaloniki to assess the inter-rater reliability for the ICMHC. The inter-rater reliability has been then rated at the day hospital and the acute wards of the Greek study centre and a modified Cohen's linear weighted kappa has been computed.

RESULTS

More than half of the EUNOMIA catchment areas show a population size of approximately 500,000 inhabitants (Table 2); three areas have a substantially smaller popula-

Table 1 Instruments used in the EUNOMIA study to assess patient-related data

Construct	Instrument (source of information)	Time points		
		t1	t2	t3
Perceived coercion concerning hospital admission	Perceived coercion items from MacArthur Admission Experience Survey (patient interview)	X		
Perceived coercion and pressures concerning hospital admission	Cantril Ladder of Perceived Coercion, items from Nordic Study on Coercion (patient interview)	X		
Perceived coercion and pressures concerning stay in hospital (only if index episode continues)	Cantril Ladder of Perceived Coercion, items from Nordic Study on Coercion (patient interview)		X	X
Outcome assessment, e.g. use of psychiatric services and contact with the police and criminal justice services after discharge (only if the patient has been discharged after the index episode)	Self-defined items (patient interview, records)			X
Characteristics of treatment	Self-defined items (records)		continuously	
Details of each coercive measure applied in the first 4 weeks after the index admission	Self-defined items (records)		continuously	
Fixed socio-demographic and clinical characteristics	Self-defined items (records, patient interview)	X		
Variable socio-demographic characteristics	Self-defined items (records, patient interview)	X	X	X
Patient's compliance with treatment	Self-defined items (staff rating if patient is in hospital, otherwise patient interview)	X	X	X
Coercion perceived by staff (only if index episode continues)	Cantril Ladder of Perceived Coercion, rephrased (staff rating)	X	X	X
Patient's aggression (only if patient is currently in hospital)	Modified Overt Aggression Scale (staff rating)	X	X	X
Symptom severity	Brief Psychiatric Rating Scale, 24 item version (researcher's rating)	X	X	X
Symptom severity and level of functioning	Global Assessment of Functioning scale (researcher's rating)	X	X	X
Patient's satisfaction with treatment (retrospective evaluation, if the patient has been discharged after the index episode)	Client's Assessment of Treatment, 7 main items (patient interview)	X	X	X
Quality of life, self-rating (optional to each centre)	Manchester Short Assessment of Quality of Life (patient interview)	X	X	X

Table 2 Characteristics of the EUNOMIA centres

	Dresden	Sofia	Prague (areas 2,3,4,8, 10)	Thessa- loniki	Tel Aviv	Naples	Vilnius	Wroclaw	Micha- lowce	Granada	Malaga	East London	Örebro	
Inhabitants in the catchment area	478,631	900,000	477,626	450,000	538,200	2,265,547	217,800	640,367	326,534	445,497	600,000	451,119	273,412	
Size of catchment area (km ²)	328	1,311	99	ca. 7,000	284	13,595	163	293	4,312	ca. 6,300	ca. 3,600	58	8,546	
Character of catchment area	urban	urban + rural	urban	urban + rural	urban	urban + rural	urban	urban	urban + rural	urban + rural	urban + rural	urban	urban + rural	
Unemployment (%)	14.7	14.4	5.6	8.1	15.8	24.9	7.1	16.4	34.3	21.9	17.3	11.2	- ^a	
Population aged 65 years or older (%)	17.4	15.4	19.7	11.3	9.4	8.1	11.5	14.9	10.7	15.5	14.0	8.0	18.2	
Suicide rate per 100,000 inhabitants: males/females	22.9/10.9	17.8/7.5	21.3/5.9	5.7/1.6 ^b	10.5/2.6 ^b	2.3/0.7	43.3/9.0	12.6/3.5	7.9/0.6	11.4/4.1	12.6/2.8	8.3/1.7	22.9/13.7	
ESMS-R2-facilities ^c	no. of beds	305	125	268	68	136	106	86	196	100	30	30	161	89
	staff per bed	1.0	0.7	0.7	0.7	0.5	2.0	0.8	0.7	0.4	1.3	1.2	0.9	2.0
ESMS-R6-facilities ^d	no. of beds	0	70	180	53	0	0	0	184 ^e	60	15	20	45	0
	staff per bed	-	0.8	0.4	0.6	-	-	-	0.2	0.3	2.2	1.4	1.1	-
Number of hospitals involved in EUNOMIA	4	2	2	1	1	5	1	1	1	1	1	2	3	
Number of acute wards involved in EUNOMIA	5	5	6	1	2	6	2	4	4	1	1	10	7	
Number of acute wards always locked	4	5	6	0	2	6	2	4	2	1	1	1	6	
General psychiatric beds on these wards	89	139	220	50	68	80	80	110	100	30	30	163	100 ^f	
Average number of beds per room	1.9	5.6	4.2	1.8	3.1	3.0	8.0	3.3	2.7	1.7	3.0	1.3	1.2	
Working hours: physicians (per bed per week)	5.3	2.6	5.5	11.2	5.9	20.5	4.1	3.4	2.2	14.0	6.7	5.6	2.8	
Working hours: nurses (per bed per week)	26.9	9.4	18.0	32.0	23.5	52.1	7.7	15.5	8.4	15.2	12.0	22.3	18.1	
Working hours: all clinical staff (per bed per week)	38.1	19.9	26.5	46.4	32.9	77.2	22.0	31.7	11.4	51.3	44.7	38.5	59.8	
ICMHC ^g 01: Establishing and maintaining relationships	1-2	1	1	2	2	1-2	1	1-2	1	1	1	2-3	1-3	
ICMHC 02: Problem and functional assessment	2	2-3	2-3	2	3	2	2	2-3	1	2	2	3	3	
ICMHC 03: Care coordination	1	1	2	1	2	2	1	0-1	2	1	1	1-3	2-3	
ICMHC 04: General health care	2-3	1-2	2	2	2	3	2	2	3	3	3	1-3	2-3	
ICMHC 05: Taking over activities of daily living	2	1	1	1	2	2	1	1	1	2	2	1-2	1-2	
ICMHC 06: Psychopharmacological and other somatic interventions	2-3	3	3	2	3	2	3	3	3	3	2	3	2-3	
ICMHC 07: Psychological interventions	1-3	1-2	1-2	2	3	1-2	1	2-3	2	1	1	1-2	1-3	
ICMHC 08: (Re)educating basic, interpersonal and social skills	1-2	1	1-2	1	3	1-2	1	2	2	1	1	1-3	0-1	
ICMHC 09: Interventions related to daily activities	2	1	1-3	1	1	1-3	1	1-2	2	1	2	2-3	0-2	
ICMHC 10: Interventions aimed at family, relatives and others	1-2	1	1-2	2	2	1-2	1	1	1	1	1	0-2	0-3	

ESMS – European Service Mapping Schedule; ICMHC – International Classification of Mental Health Care

^a no valid regional data available, but low unemployment rate; ^b national data, no data available for catchment area; ^c hospital wards (in psychiatric and general hospitals) to which acute admissions from a catchment area are routinely made; ^d long-stay psychiatric inpatient wards to which patients are admitted for indefinite periods and which have 24-hour staffing; ^e not standardized to the catchment area, applies to a greater region; ^f includes 8 beds for the treatment of addiction; ^g ICMHC rating scale for level of specialization in each modality of care: 3=high level of specialization; 2=intermediate level of specialization, 1=low level of specialization, 0=not applicable to this module of care

tion, and two areas have a significantly larger one. Since seven of the catchment areas include rural components, the density of the population varies enormously even between areas of similar population size, ranging from 32 (Örebro) to 8845 inhabitants (East London) per square kilometer. As shown by the unemployment rates, huge economic differences exist across these regions. While the population in the Czech, Swedish and German catchment areas include rather high percentages of old people, this is not the case in the Tel Aviv, Naples and London areas. An almost 20-fold difference for males and a more than 10-fold difference for females is observed in suicide rates across the regions, due to the low risk in the Italian, Greek, Slovak and English areas and the high risk in the Lithuanian one.

The ratio of psychiatric beds per 1,000 inhabitants ranges from 0.05 to 0.64. The highest ratios are observed in the German (0.64) and Czech (0.56) areas, and the lowest in the Italian, Spanish (both below 0.07), Bulgarian (0.14), Greek (0.15), and Israeli (0.25) areas. Staffing of hospital facilities shows an East-West difference across Europe, with 0.4-0.7 staff per bed in the Eastern areas, and 0.9 or more staff per bed in the Western areas; the highest ratios are those of Örebro and Naples (both 2.0).

The data describing some core features of the acute wards in the hospitals (Table 2) demonstrate that wards are operated differently across the sites. One indicator of comfort during hospital stay, the average number of beds per room, shows some West-East gradient, which may affect the use of coercive treatment measures such as mechanical restraint or seclusion. Similarly, it is to be assumed that the practice of coercive treatment will be influenced if the doors of the acute ward are not always locked (notably at the Thessaloniki and London centres). Additionally, clinical practice is likely to be influenced by the substantial differences in staffing levels: some Central European centres (Sofia, Vilnius, Michalovce) display the most prominent shortages (11.4-22.0 working hours of all relevant professional groups per bed per week), whereas the Spanish, Greek, Swedish and Italian centres seem to be very well staffed.

Despite these differences in staffing, the levels of specialization of the most important modalities of care for people with acute mental illness seem to be similar across the participating EUNOMIA wards. This includes problem and functional assessment (i.e., all activities necessary to formulate, monitor and consequently adjust an individual plan for treatment or rehabilitation), general health care (provided by professionals to patients suffering from somatic as well as psychiatric problems), and psychopharmacological and other somatic interventions. None of these modalities of care are provided below an intermediate level of specialization (with the exception of general health care at the Bulgarian site). The level of specialization in other modalities of care is also similar across all wards: these include establishing and maintaining relationships (i.e., all activities aimed at involving individuals in need of professional help in the mental health care process); care coordi-

nation (which includes all activities necessary for individuals to have access to all required health and social services in the catchment area); re-educating basic, interpersonal and social skills (i.e., providing activities based on well-defined theoretical models designed to help individuals cope with their impairments and personal disabilities), and psychological interventions based on well-defined theoretical models provided by specifically trained professionals. Some more prominent differences in levels of specialization can be seen in the rest of the modalities of care requiring higher staffing levels.

The overall inter-rater agreement for ICMHC was good for both the day hospital ($\kappa=0.61$) and the acute wards ($\kappa=0.80$). For the acute ward, linear weighted kappas for nine out of the 10 modalities were good to excellent (0.73 to 1.00), with moderate agreement ($\kappa=0.43$) only for the modality "taking over activities of daily living".

DISCUSSION

The characteristics of the catchment areas show that the EUNOMIA study is conducted in European regions with significant socio-demographic and economic differences. Data on unemployment rates and health status of the population, in particular, show that living conditions are vastly different.

The current structure of the hospital-based services clearly reflects different stages of the psychiatric reform processes and the underlying intentions of health policies. The consortium includes areas that have already achieved community orientation of their mental health services, particularly Italy, Spain and the UK, which are therefore characterized by a very low rate of inpatient psychiatric beds, as well as areas like Wroclaw, Dresden, and to a lesser degree Prague, where hospital services still need to be decreased, according to the health policies of the respective governments.

The staffing of the participating acute wards cannot be discussed according to established international standards. If we consider the German guidelines for staff levels in these services (15), it appears that several EUNOMIA centres have staffed their acute wards at a similar level. The two centres of Naples and Örebro are well above this standard, possibly due to their specific situation of having a few small acute psychiatric wards integrated in a strictly community-oriented system of general hospitals. In contrast, several Central European centres (in particular, the Bulgarian, Slovak and Lithuanian ones) show a low staff level at these wards, due to poor economic resources for health care.

Against this background of different organization of hospital-based acute services and the variety of staffing levels, it is somewhat surprising that the level of specialization concerning the modalities of care which are most important for providing acute treatment show no great differences among the participating wards. Problem and functional assessment, general health care, and psychopharmacological and

other somatic interventions are provided at a medium to high level of specialization. This means that standard diagnostic tools are used repeatedly, that counselling of other medical specialists for (mostly severe) somatic problems are (regularly) available, and that staff is well-trained in monitoring the application of a range of somatic interventions.

Assessment of patients in the EUNOMIA project started in the summer of 2003 and will continue until the first half of 2006. All the instruments used in the study have been translated and, where necessary, back-translated. They are being administered by researchers receiving continuous training for inter-rater reliability. Furthermore, the consortium developed and implemented a standardized computerized system for basic documentation of all patient-related data, including individual coercive measures in acute psychiatric wards. Currently, this is only used for research purposes but, if transferred to routine clinical practice, it might facilitate continuous quality assurance, clinical and legal certainty, and the preparation of public health reports in this field. Furthermore, all project-associated local expert groups have started their activities to establish or improve existing guidelines for best clinical practice, and the special team of legal experts has nearly finished their work on detailed reports covering a range of aspects of the national legal situations concerning the issue of coercive treatment. Finally, all project-related scientific activities should result in the development of a European guideline ("patient charter") for the best practice of coercive measures in psychiatry, that will be discussed at the WPA-sponsored thematic conference "Coercive Treatment in Psychiatry: a Comprehensive Review" organized by the EUNOMIA group in June 2007.

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References

1. Lelliott P, Quirk A. What is life like on acute psychiatric wards? *Curr Opin Psychiatry* 2004;17:297-301.
2. Sailas E, Fenton M. Seclusion and restraint for people with serious mental illness. *The Cochrane Database of Systematic Reviews* 2000; Issue 1.
3. Dressing H, Salize HJ. Compulsory admission of mentally ill patients in European Union Member States. *Soc Psychiatry Psychiatr Epidemiol* 2004;39:797-803.
4. Becker T, Magliano L, Priebe S et al. Evidence-based mental health services research. The contribution of some recent EU-funded projects. In: Kirch W (ed). *Public health in Europe*. Berlin: Springer, 2004:173-87.
5. Zinkler M, Priebe S. Detention of the mentally ill in Europe - a review. *Acta Psychiatr Scand* 2002;106:3-8.
6. Salize HJ, Dressing H. Epidemiology of involuntary placement of mentally ill people across the European Union. *Br J Psychiatry* 2004;184:163-8.
7. Committee of Ministers of the Council of Europe. "White Paper" on the protection of the human rights and dignity of people suffering from mental disorder, especially those placed as involuntary patients in a psychiatric establishment. Strasbourg: Council of Europe, 2000.
8. Olsen DP. Toward an ethical standard for coerced mental health treatment: least restrictive or most therapeutic? *J Clin Ethics* 1998;9:235-46.
9. Glass CR, Arnkoff DB. Consumers' perspectives on helpful and hindering factors in mental health treatment. *J Clin Psychol* 2000;56:1467-80.
10. Nilstun T, Syse A. The right to accept and the right to refuse. *Acta Psychiatr Scand* 2000;101(Suppl. 399):31-4.
11. Beecham J, Johnson S and the EPCAT Group. The European Socio-Demographic Schedule (ESDS): rationale, principles and development. *Acta Psychiatr Scand* 2000;102(Suppl. 405):33-46.
12. Johnson S, Kuhlmann R and the EPCAT Group. The European Mapping Schedule (ESMS): development of an instrument for the description and classification of mental health services. *Acta Psychiatr Scand* 2000;102(Suppl. 405):14-23.
13. Salize HJ, Bullenkamp J, Alscher I et al. Quality assurance and documentation in the communal psychiatric combine (GPV) - a standardized procedure for regional recording and steering of community-based mental health care. *Psychiatr Prax* 2000;27:92-8.
14. de Jong A. Development of the International Classification of Mental Health Care (ICMHC). *Acta Psychiatr Scand* 2000;102(Suppl. 405):8-13.
15. Kunze H, Kaltenbach L. *Psychiatrie - Personalverordnung*. Textausgabe mit Materialien und Erläuterungen für die Praxis. Köln: Kohlhammer, 2002.