Associated Factors of Involuntary Admission through a Psychiatric Emergency Service in Taiwan

Who and what should be included in the process of involuntary admission?

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Backgrounds

- The number of involuntary psychiatric admission has been rising since the 1990s in European countries (Salize and Dressing 2004)
- Increasing in the admission under the mental health act 1983 in England (Hotopf 2000; Lelliott 2003; Keown 2008)
- Dramatic differences in compulsory admission
  - Different characteristics of national mental health care laws or other legal framework, such as compulsive admission criteria, procedural regulations (Salize and Dressing 2004)
  - Varying administrative routines and differences in quality standards of national or regional mental health care systems
  - Professionals' ethics and attitudes, public preoccupation about risk arising from mental illness (Zinkler 2002)

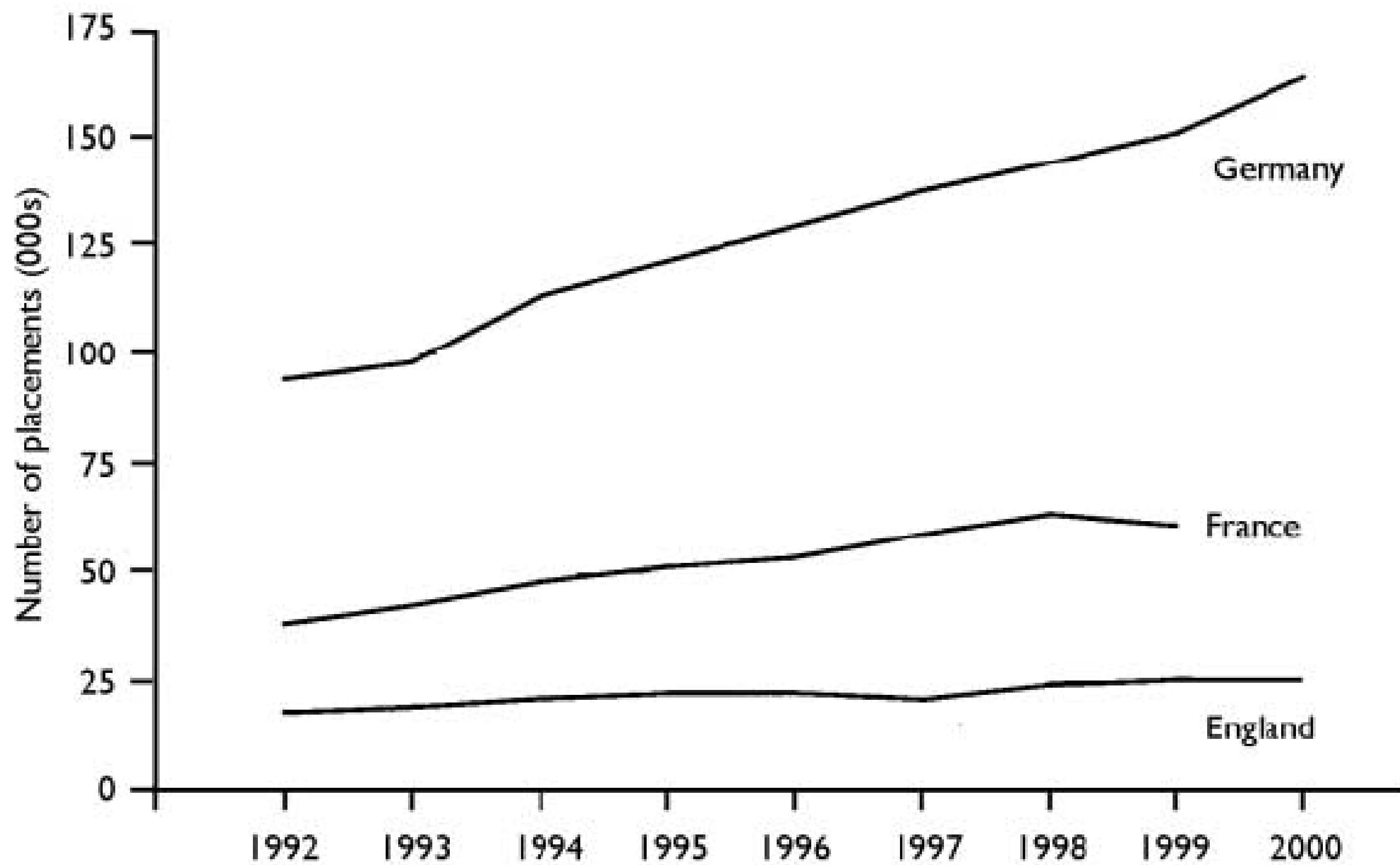

Fig. 1 Frequency of involuntary placements during the 1990s in the most populous European Union member states.

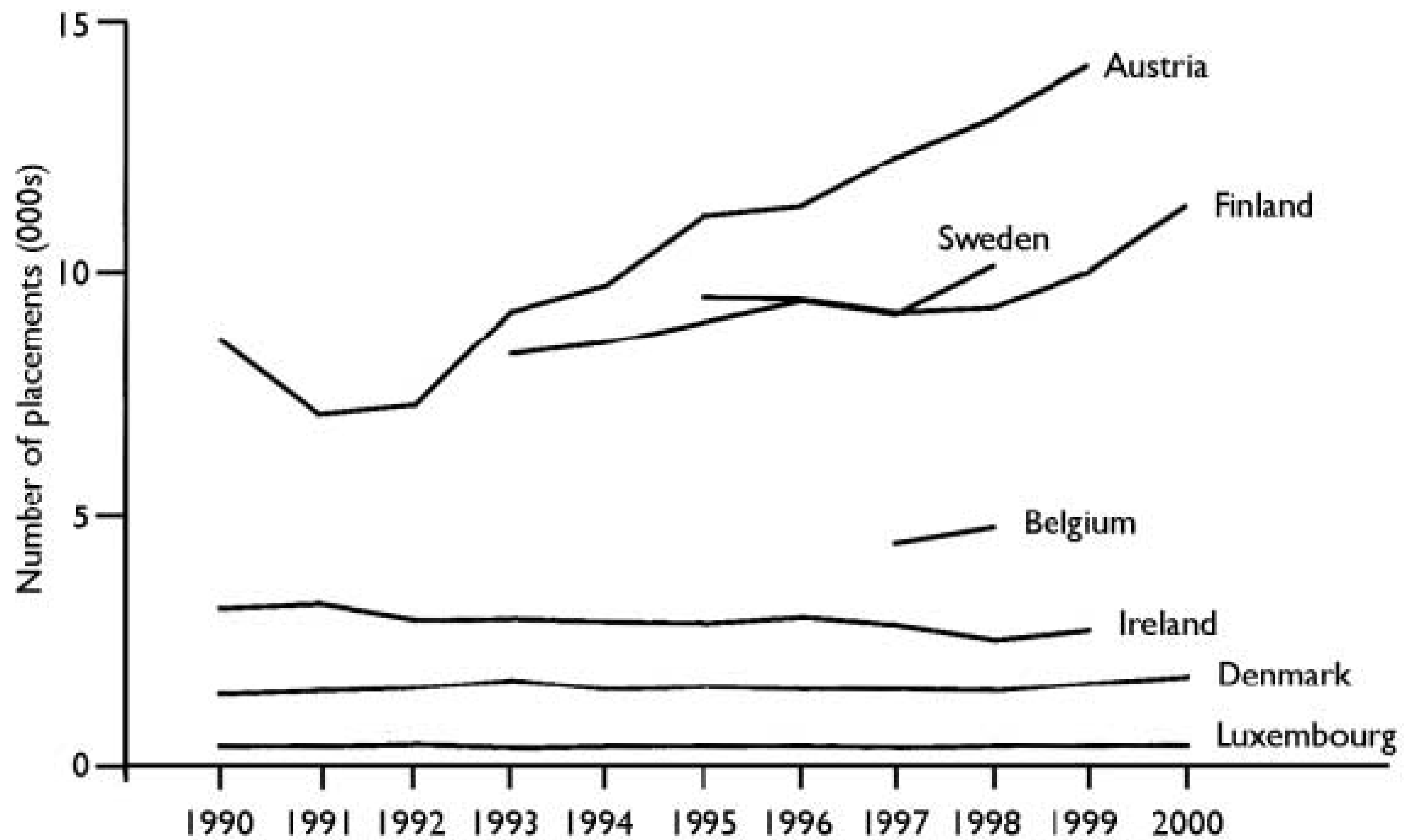

Fig. 2 Frequency of involuntary placements during the 1990s in the smaller European Union member states.

Table 1 Rates of involuntary placements for mental disorder in European Union countries

Country	Year	Involuntary placements		
		n	Percentage of all in-patient episodes	Per 100 000 population
Austria	1999	14 122	18	175
Belgium[1]	1998	4799	5.8	47
Denmark[1]	2000	1792	4.6	34
Finland	2000	11 270	21.6	218
France	1999	61 063	12.5	11
Germany[2]	2000	163 551	17.7	175
Greece		Not available	Not available	Not available
Ireland	1999	2729	10.9	74
Italy		Not available	12.1[3]	Not available
Luxembourg	2000	396	Not available	93
The Netherlands	1999	7000[4]	13.2	44
Portugal	2000	618	3.2	6
Spain		Not available	Not available	Not available
Sweden	1998	10 104	30[5]	114
United Kingdom[6]	1998	46 300		93
	1999	23 822	13.5	48

1. Only status at admission; number of changes from voluntary to involuntary status during the same in-patient episode not considered.
2. Legal applications per year (of which about 90% result in actual involuntary placements); placements per 100 000 refer to 1988, percentage of all in-patient episodes to 1999.
3. Percentage for region of Lombardy only, year is unknown.
4. Number of court decisions on compulsory admission.
5. For year 1997.
6. Figures for England only; 1998 includes compulsory admissions as well as patients detained involuntarily after being admitted voluntarily, 1999 includes compulsory admissions only.

Detained Criteria or Conditions

Mental illness and danger-criterion	Austria, Belgium, France, Germany, Luxembourg, The Netherlands
Mental illness and danger-criterion *or* Mental illness and need for treatment-criterion	Denmark, Finland, Greece, Ireland, United Kingdom, Portugal
Mental illness and need for treatment-criterion	Italy, Spain, Sweden

Dressing and Salize 2004

Table 3 Procedural regulations for compulsory admission across EU Member States

	Diagnoses legally defined	Psychiatrist mandatory for initial assessment	Deciding authority	Involuntary placement and treatment legally defined as different modalities*	Detailed regulation of coercive measures	Compulsory outpatient treatment possible	Mandatory inclusion of patient counsel
Austria	n. d.	yes	non-med.	yes	yes	no	yes
Belgium	n. d.	no	non-med.	no	no	yes	yes
Denmark	psychosis	no	med.	yes	yes	no	yes
Finland	n. d.	no	med.	no	no	no	no
France*	n. d.	no	non-med.	no	no	no	no
Germany	wide	no	non-med.	yes	yes	no	no
Greece	n. d.	yes	non-med.	no	no	no	no
Ireland	wide, PD	yes	med.	no	no	no	yes
Italy	n. d.	no	non-med.	no	no	no	no
Luxembourg	n. d.	no	med.	yes	no	yes	no
The Netherlands	n. d.	yes	non-med.	yes	yes	no	yes
Portugal	n. d.	yes	non-med.	no	no	yes	yes
Spain	n. d.	yes	non-med.	no	no	no	no
Sweden	n. d.	no	med.	yes	yes	yes	no
United Kingdom	wide, PD	yes	non-med.	yes	no	no	no

* France: HO-procedure
* Involuntary placement or treatment legally defined as different modalities: indicates only the legal separation of the modalities, regardless of whether or not in routine care, persons placed involuntarily must accept treatment

Abbreviations:

Diagnosis: *n. d.* not defined; *wide* diagnostic categories mentioned but no restriction to specific diagnoses; *psychosis* restriction to psychosis or conditions similar to psychoses; *PD* special regulations for personality disorder

Deciding authority: *non-med.* non-medical; *med.* medical

Dressing and Salize 2004

Table 4 Time periods for assessment, short-term detention and initial placement

	Maximum between psychiatric assessment and compulsory admission	Maximum of short-term detention	Decision-making authorities for short-term detention	Maximum length of initial placement	Re-approval
Austria	4 days	48 hours	Psychiatrist	3 months	3 months
Belgium	15 days	10 days	Prosecutor	40 days for observation 2 years for regular placement	After 25 days of initial observation, 15 days before end of individually ordered length
Denmark	24 hours (danger criterion) 7 days (treatment criterion)	Not separately defined**	Psychiatrist	Not defined	3, 10, 20, 30 days, then monthly
Finland	3 days	Not separately defined**	Psychiatrist	9 months	3 months
France	24 hours (HO-procedure)	48 hours	Mayor (Paris: Police)	Not defined	HO-procedure: 1, 3, 6 months
Germany	24 hours–14 days*	24 hours (in 15 Federal States) 3 days (in 1 Federal State)	Municipal public affairs office or psychiatrist	Preliminary detention: 6 weeks Regular placement 1 year, in obvious cases 2 years	Preliminary detention: 6 weeks Regular placement: 6 months (in 1 Federal State)
Greece	10 days	48 hours	Prosecutor	6 months	
Ireland	24 hours	Not separately defined**	Psychiatrist	21 days	21 days, 3, 6, 12 months
Italy	2 days	48 hours	Public Health Department	7 days	7 days
Luxembourg	3 days	24 hours	Police, physician, guardian, social worker	Preliminary detention: 14 days	14 days
The Netherlands	5 days	24 hours	Mayor	Preliminary detention: 3 weeks Regular placement: 6–12 months	Preliminary detention: 3 weeks Regular placement: 6–12 months
Portugal	12 days	48 hours	Psychiatrist	Not defined	2 months
Spain	Not defined	24 hours	Psychiatrist	Not defined	6 months
Sweden	4 days	24 hours	Psychiatrist	4 weeks	4 weeks, 4, 6 months
United Kingdom	14 days	72 hours	Police or physician plus social worker	Assessment order: 28 days Treatment order: 6 months	28 days 6 months

* different for each Federal State in Germany; ** regular procedure also applies to emergency cases

Dressing and Salize 2004

The Gaps between Taiwan and Western Countries

- Decision-making authorities for short-term detention: only psychiatrist
- Psychotic state, decided by a psychiatrist
  - "presenting abnormal mind and conduct detaching from the reality and incapability of performing basic matters on their own"
- Danger-criterion
  - "Patients who are or likely to be harmful to others or themselves"
- Psychiatrist mandatory for initial assessment
- No mandatory inclusion of patient counsel, families as "protector"

- Maximum of short-term detention: 2 days
- Maximum between psychiatric assessment and compulsive admission: 3 days
- Deciding authority: approval by Review Committee, non-medical and medical
- Involuntary placement and treatment legally defined as different modalities: no
- No detailed regulation of coercive measures
- Compulsive community treatment
- Maximum length of initial placement: 60 days
- Re-approval: 60 days

The Gaps of Previous Studies

- No related study in non-western countries
- Comprehensive model
  - Patient characteristics
  - Clinical characteristics
  - Service use characteristics
  - Ecological characteristics

Demographic Characteristics

- Male (Riecher 1991, Cougnard 2004)
- Low social economic status (Riecher 1991)
- Inconsistent result with young age (Mulder 2008, Riecher 1991)
- Immigrants
  - Caribbean and black African (Bebbington 1995, Morgan 2005)
  - Not significant after controlling for symptoms severity, danger, motivation for treatment and level of social functioning. (Mulder 2006)

Clinical Characteristics

- Danger to others, especially aggressive behaviours (Schuepbach 2006, Mulder 2006, Mulder 2008)
- Schizophrenia (Riecher 1991, Bebbington 1995, Bola 2011)
- Psychotic disorder (Mulder 2006, Mulder 2008, Schuepbach 2006)
- Organic mental disorder (Mulder 2008)
- Substance abuse (Mulder 2008, Schuepbach 2006)
- Absence of anxiety or depressive symptoms (Cougnard 2004, Mykelbust 2012)

Service Use Characteristics

- Poor insight or adherence for treatment (Mulder 2006, Schuepbach 2006, Mykelbust 2012)
- Previous history of involuntary admission (Fennig 1999, Oluwatayo 2004, Post 2009)
- Fewer outpatient contact (Post 2009)
- Referred by the police and mental health workers instead of general practitioners (Thomas 1993, Post 2009, Douzenis 2010)
- Referred during working hours (Mulder 2006)

Ecological Characteristics

- Lack of integrated services (Wierdsma 2009)
- Lack of community-care networks (Wierdsma 2007)
- Contracting economics (Kessell 2006)

Methods

- Study setting
  - The psychiatric emergency service in Taipei City Psychiatric Center, Taiwan (TCPC)
  - It is the only public psychiatric hospital in Taipei City, and responsible for providing mental health services to the 7.4 millions residents of northern Taiwan
  - The hospital provides comprehensive psychiatric services, including acute hospitalization, emergency service, rehabilitative hospitalization, day care, community mental health and walk-in clinics

- Materials
  - Information was obtained from the administrative data of the consecutive patients visiting the psychiatric emergency service in Taipei City Psychiatric Center in 2009-2010
  - There were total 7,656 visits. Among them, 2,777 (36.3%) were admitted. These were included as samples in this study

- Data collection
  - Demographic variables: gender, age
  - Clinical variables: presenting problems (coding by nurse; violence, suicide, disturbing, anxiety, substance), discharge diagnosis (coding by psychiatrists, ICD-9-CM)
  - Service use variables: time of arrival and discharge, place of referral, police referral, length of stay

- Data analysis
  - Descriptive analyze was done to calculate of the percentage of those with involuntary admission
  - Those who were voluntary and involuntary admission were compared by univariate analysis (Chi-Square & t-tests)
  - These two groups were then analyzed by stepwise multiple logistic regression to identify the characteristics of the involuntary admission in the psychiatric emergency service

Results

Table 1. Demographic and service use characteristics

	Voluntary admission		Involuntary admission		
	n	(%)	n	(%)	
Variable	2667	(96.0)	110	(4.0)	*P* value
Gender: male	1322	(49.6)	57	(51.8)	0.644
Age (year)	42.2	±14.7	41.9	±12.3	0.864
Daytime PES[a] arrival	1238	(46.4)	56	(50.9)	0.355
Daytime PES[a] discharge	2597	(97.4)	104	(94.5)	0.075
Referral place					0.716
Outer Taipei	816	(30.6)	32	(29.1)	
Inner Taipei	1743	(65.4)	75	(65.5)	
Others	108	(4.0)	3	(2.7)	
Referral from other hospitals	131	(4.9)	5	(4.5)	0.861
Police referral	1349	(50.6)	84	(76.4)	<0.001
Length of PES[a] stay (day)	0.86	±0.64	1.15	±0.61	<0.001

a. Abbreviation of PES is psychiatric emergency service

Table 2. Clinical characteristics assessed by psychiatric nurses

	Voluntary admission		Involuntary admission		
Variable	n	(%)	n	(%)	*P* value
Higher triage	543	(20.4)	40	(36.4)	<0.001
Presenting problem					
Violence	713	(26.7)	56	(50.9)	<0.001
Suicide	287	(10.8)	7	(6.4)	0.142
Disturbance	1308	(49.0)	59	(53.6)	0.345
Substance	115	(4.3)	6	(5.5)	0.565
Anxiety	523	(19.6)	9	(8.2)	0.003

Table 3. Clinical characteristics assessed by psychiatrists

	Voluntary admission	Involuntary admission	
Variable	n (%)	n (%)	*P* value
Diagnosis			
Others	264 (9.9)	8 (7.3)	0.364
Schizophrenia or delusional disorder	1094 (41.0)	41 (37.3)	0.433
Unspecified psychosis	601 (22.5)	38 (34.5)	0.003
Bipolar disorder	375 (14.1)	15 (13.6)	0.900
Other mood disorder	333 (12.5)	8 (7.3)	0.103
Physical consultation	234 (8.8)	9 (8.2)	0.829

Table 4. Stepwise multiple logistic regression

Variable	OR	95% C.I. for OR
Police referral	2.578	1.628-4.081
Violence as presenting problem	2.237	1.500-3.336
Unspecified psychosis	1.661	1.089-2.533
Length of PES[a] stay	1.652	1.314-2.076
Daytime PES[a] discharge	0.380	0.155-0.932

a. Abbreviation of PES is psychiatric emergency service

Other variables entered in backward stepwise: age, gender, daytime arrival, higher triage, presenting problem as suicide or anxiety, and diagnosis as schizophrenia, bipolar disorder, or other mood disorder.

Discussions

- Rate of involuntary admission
  - Per 100,000 population in Taiwan: 7.4 (98-99)
  - Percentage of all in-patient episodes in TCPC: 2.4% (123/5077)
- Police referral
  - Incident in community
  - Impending or ongoing danger for self or others
- Presenting problems evaluated by nurse
  - Violence, imminent danger to others
- Seldom turn down the request from the police and evaluation by the nurse (Post 2009)

- Length of stay, and less daytime admission
  - Complicated procedures and many involved personnel
- Triage and diagnosis
  - Triage, not key factors as compared to police evaluation and presenting problem as violence.
  - Unspecified psychosis, no definite diagnoses when discharge, trainee doctors supervised by psychiatrist
- Non-significant
  - Age, gender, anxiety and suicide.

Implications

- Not only psychiatrists in the process compulsive admission, including emergency placement, initial assessment, and short-term detention
  - Police
  - Nurse
  - Trainee doctor
- Initial assessment
  - Non-specific diagnosis, other trained doctor
- Provide more trainings toward different professionals in community, primary care, and secondary care

Strengths

- The first study in non-western countries
- Actual emergency psychiatry setting
- Large study population
- Various dimensions of variables

Limitations

- Representative, external validity
  - 123 (TCPC)/283 (Taipei)/3418 (Taiwan)
  - In metropolitan area
- The diagnosis was based on a clinical interviews as performed in day-to-day practice, no standardized assessment instrument
- Lack in other important confounding factors
  - Outpatient contacts, previous involuntary admission
  - Chart review
  - Claim data from national health insurance

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