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Cohort study of psychiatric patients in Forlì District

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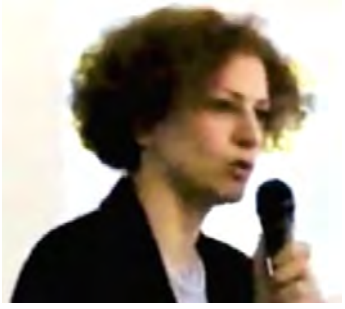

Monica Pacetti

Summary

Italy was the first Western country to set up mental health care in the network of local services. This allowed to open new horizons for research in the treatment of patients suffering from psychiatric disorders. The Emilia Romagna Region has actively participated in this process of change, constituting the Departments for Mental Health (DSM). The treatment plans of 5,976 adults, in the period from 1978 to 2014, residing in the Forlì area, were analyzed. The socio-demographic predictors relating to access to services are the fact of having an average age and being married according with literature. The analysis of the outcomes of the treatment plans shows that a third of the subjects stay in treatment, four out of ten abandon and two out of five complete it. Treatment retention appears to have had a decreasing trend, with very low values (18%) from 2005 to 2009, this data corresponds with the increasing practise to conclude treatments according with the "Stepped Care" model diffusion, promoted by the regional program "Giuseppe Leggieri". The integrated care model between mental health care professionals and general practitioners (GPs) is an effective strategy not only for prevention, but also for prognosis of mental disorders, according with literature especially for major mental disorders. The outcome of treatment evaluation highlights four different profiles of subjects, relate to different types of discharge from mental health centre. In our study most of concluding treatment are higher for females, married, widows, and for people over 50 years old.

Key words: psychiatric diagnosis, mental health treatment, mental health outcomes

Introduction

It emerges from scientific literature [1,2] that in richer countries there is greater attention to Mental Health and greater investment in human and economic resources.

Law 18 of 1978 brought about radical changes in the Mental Health care system in Italy, with the territorial services constitution, best known as the Mental Health services. Italy was the first Western country to set up mental health care in the network of local services. This allowed to open new horizons for research in the treatment of patients with psychiatric pathologies [3]. The Emilia Romagna Region has actively participated in this process of change, establishing the Departments for Mental Health (DSM) as reported in the DGR n. 411/1998.

The Mental Health Centre (CSM) of Forlì, consistent with the national and regional programme, aims to promote mental health, prevent the distress of mental disorders and disabilities and differentiate the treatments paths of psychiatric pathologies.

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Conflict of interest
The Authors declare no conflict of interest.

This evolutionary process aimed towards a "services culture" highlighted some significantly critical issues, improved by Emilia Romagna Region through the 2009-2011 Mental Health Implementation Plan. The major criticalities highlighted were: an inefficient approach to rehabilitation and its consequent risks of chronicity the persistence of a social delegation and stigma.
According to the data collected in Italy in 2017 by the SISM (The Mental Health Information System) of the Ministry of Health [4], 851,189 individuals with psychiatric pathologies were assisted by specialised services; 335,794 were patients who, for the first time, get into with the Departments of Mental Health and 67.6% of the patients were over 45 years old. On a national level, the psychiatric pathologies most frequently found were depression (39.2 per 10,000 inhabitants), schizophrenia (35.8 per 10,000 inhabitants), and neurotic and somatoform syndromes (22.0 per 10,000 inhabitants) [3].
Analysing the causes of hospitalization derived from the diagnosis of hospital discharge, it appears that Affective Disorders are the first cause in women and the second in men, but by far lower rates; Schizophrenia and related disorders appear to be the leading cause of hospitalization in men [5]. The rates of patients treated at a territorial level in specialised areas, by Diagnosis-related groups, highlight important gender differences. Rates related to schizophrenic disorders, personality disorders, substance abuse and mental retardation disorders are greater in males than females, while the opposite occurs for affective, neurotic and depressive disorders. In particular, the rate of depression in female patients is almost double that of the male sex (29.2 per 10,000 inhabitants in males and 48.3 per 10,000 inhabitants in females) [6].

Objectives of the study

Evaluate the effectiveness of the different types of interventions carried out by the Forlì Mental Health Centre, of the Local Health Authority of Romagna, for the treatment of patients with mental disorders, regarding outcome and duration.

Materials and methods

Population

5,976 patients were studied under treatment at the Psychiatry Unit of Forlì in the period 1978-2014, all resident in the Forlì area, following an integrated treatment plan at the CSM, with the necessity of complex interventions.
The information database was extracted from the computerized medical records of the Romagna AUSL headquarters in Forlì [7]. Demographic variables were collected for each subject: sex, citizenship, age, housing situation, marital status, qualifications, employment status, primary and secondary diagnosis, treatment received and period of treatment. The research ended on 31/12/2014.
The results of the interventions analysed are: "in treatment" which means that the subject was still present at the CSM, "conclusion" indicates the subject was discharged with or without referral to the GP, "abandonment" means that the subject left the treatment without having completed it, not in agreement with the psychiatrist, "death" is when the subject died during treatment, "other" indicates discharge when the referral was not appropriate and therefore not a case of psychiatric relevance, and was therefore sent back to another AUSL service, or for other undefined reasons.
The diagnoses carried out using ICD-9 were divided into the following diagnostic groups: schizophrenic psychosis (295), unipolar (296.2/296.3), bipolar (296 except 296.2/296.3), paranoid states (297), other non-organic psychosis (298/299), neurotic disorders (300), personality disorders (301), adjustment disorders(308/309/311/312/313), other psychiatric disorders (302/306/307/314/315/316) , organic disorders (290/293/294/310/317/318/319), substance use disorders (291/292/303/304/305), non-psychic disorders (all other diagnoses).
In a subsequent analysis, the diagnoses were grouped into three categories:

- MAJOR PSYCHIATRIC DISORDERS which include schizophrenic (295), unipolar (296.2/296.3), bipolar (296 except 296.2/296.3) psychosis, paranoid states (297), other inorganic psychoses (298);
- MINOR PSYCHIATRIC DISORDERS including neurotic disorders (300), personality disorders (301), adjustment disorders (308/309/311/312/313);
- OTHER which include other inorganic psychoses (299), other psychiatric disorders (302/306/307/314/315/316), organic disorders (290/293/294/310/317/318/319), substance use disorders (291/292/303/304/305), non-psychic disorders (all other diagnoses) and the missing diagnosis.

Statistic analysis

Statistical analysis is a multivariate tecnique using Poisson regression. The variables used in the model refer to the first consultation and are those available in the CSM archives (computerized medical records): sex, citizenship, age, housing situation, marital status, qualifications, employment status and the treatments received at the beginning of the treatment.
To analyze the data in relation to the time of the first consultation, the following time periods have been defined: ≤ 1989, 1990-1994, 1995-1999, 2000-2004, 2005-2009, 2010-2014.
The calculation of person-years at risk, was calculated from the date of the first consultation until the termination of the treatment path (due to discharge, interruption, or death).
The calculation of the crude rate of discharge, interruption and death, was calculated in relation to the

characteristics of the patients. The 95% confidence interval (95% CI) of the rate was calculated by the approximate maximum likelihood method: exp [ln (Rate) ± 1.96 × Casi-1/2].
Univariate and multiple analysis to evaluate the relationship between the duration of the treatment and the outcome; the relationship between the characteristics of the patients and the type of treatment provided, using the Poisson regression to calculate the ratios between rates (RR) of discharge, interruption and death and their 95%. In the model were included variables relating to age, duration, gender, nationality, qualifications, and employment status. The analyzes were conducted with the Stata16 program.

Results of the analysis on the outcome of the treatment

Characteristics of the subjects of the cohort

5,976 subjects were enrolled in the study. The analysis of the data shows a statistical significance of the housing situation and of the analysis relating to hospitalizations at the Intensive Therapeutic Residence (RTI - Tab. I).
The cohort is made up of 58.4% females, the average age at access was 47.7 years old, a significant fact was that only 19.5% were under the age of 30 and that 21.5% had the first contact with the mental health centre at the age of over 65, age of geriatric relevance. 9.2% did not have Italian citizenship. The housing situation was characterized by the fact that most of them lived with others (76.6%), 16.0% lived alone and 6.3% were placed in a structure; 43.4% were married, 35.2% single, 10.5% separated / divorced, and 9.4% widowed. 29.5% had a high educational qualification (high school diploma or university degree); the majority of patients were retired (36.3%), 31.9% were in employment and 14.3% were unemployed.
As far as the pathology is concerned, about one out of three people had a neurotic disorder as a primary diagnosis, 13.1% suffered from unipolar mood disorder, 12.2% bipolar, 9.5% suffered from adjustment disorders, 9.4% from schizophrenic psychosis, and 5.0% from organic disorders; the least represented diagnoses in the population were: paranoid states, other non-organic psychosis, personality

Table I. Characteristics of cohort's patients at baseline, distributed by gender.

		Males		Females		Total		Chi²
		N	%	N	%	N	%	
	Total	2,482	100,0	3,494	100,0	5,976	100,0	
Age	**Mean age DS**	45.4 (18.6)		49.4 (18.3)		47.7 (18.5)		
Age-classes	≤ 17	70	2.8	55	1.6	125	2.1	p < 0.001
	18-29	531	21.4	510	14.6	1,041	17.4	
	30-39	463	18.7	633	18.1	1,096	18.3	
	40-49	487	19.6	687	19.7	1,174	19.6	
	50-64	483	19.5	799	22.9	1,282	21.5	
	≤ 65	448	18.0	810	23.2	1,258	21.1	
Nationality	Non-natives	194	7.8	354	10.1	548	9.2	0.002
Living conditiom	Alone	380	15.3	578	16.5	958	16.0	0.134
	With others	1,903	76.7	2,677	76.6	4,580	76.6	
	Facilities	166	6.7	209	6.0	375	6.3	
	Other	33	1.3	30	0.9	63	1.1	
Civil status	Single	1,182	47.6	924	26.4	2,106	35.2	p < 0.001
	Married	968	39.0	1,642	47.0	2,610	43.7	
	Separate/divorced	226	9.1	402	11.5	628	10.5	
	Widower	78	3.1	483	13.8	561	9.4	
	Other	28	1.1	43	1.2	71	1.2	
Educational degree	Low	1,780	71.7	2,431	69.6	4,211	70.5	p < 0.001
	High	702	28.3	1,063	30.4	1,765	29.5	
Professional condition	Employed	924	37.2	983	28.1	1,907	31.9	p < 0.001
	Not employed	460	18.5	394	11.3	854	14.3	
	Retired	880	35.5	1,291	36.9	2,171	36.3	
	Other	218	8.8	826	23.6	1,044	17.5	

		Males		Females		Total		Chi²
		N	%	N	%	N	%	
Primary diagnosis	Schizophrenic psychosis	299	12.0	264	7.6	563	9.4	p < 0.001
	Paranoid state	57	2.3	73	2.1	130	2.2	
	Other non organic psychosis	70	2.8	67	1.9	137	2.3	
	Major depression	272	11.0	513	14.7	785	13.1	
	Bipolar disorder	279	11.2	452	12.9	731	12.2	
	Neurotic disorder	664	26.8	1,151	32.9	1,815	30.4	
	Personality disorders	107	4.3	103	2.9	210	3.5	
	Adjustment reactions	222	8.9	344	9.8	566	9.5	
	Other psychiatric disorders	17	0.7	44	1.3	61	1.0	
	Organic disorders	163	6.6	137	3.9	300	5.0	
	Substances use disorders	97	3.9	38	1.1	135	2.3	
	Non psychiatric disorders	45	1.8	42	1.2	87	1.5	
	Missing	190	7.7	266	7.6	456	7.6	
Treatments	Clinical psychiatric	2,376	95.7	3,395	97.2	5,771	96.6	0.003
	Psychoterapeutic	235	9.5	272	7.8	507	8.5	0.021
	Day care center	33	1.3	26	0.7	59	1.0	0.024
	Work transition programs	125	5.0	76	2.2	201	3.4	p < 0.001
	Socio-rehabilitative	430	17.3	372	10.6	802	13.4	p < 0.001
	RTI	228	9.2	350	10.0	578	9.7	0.284
	RTR	101	4.1	83	2.4	184	3.1	p < 0.001
	RSR	116	4.7	74	2.1	190	3.2	p < 0.001
	SPDC/SPOI	652	26.3	673	19.3	1,325	22.2	p < 0.001

disorders, other psychiatric disorders, substance disorders, and non-psychiatric disorders.

As for the treatment, almost all the subjects started a treatment plan with the psychiatrist (psychiatric clinical product - 96.6%), 22.2% underwent a hospitalization for acute psychiatric symptoms (SPDC/SPOI), 13.4% also undertook socio-rehabilitative treatment, 8.5% a psychotherapy cycle and 9.7% underwent at least one hospitalization in RTI (intensive treatment residence).

The analysis of characteristics by gender (Tab. I) shows that females accessed therapy on average at a later age than males (49.4 *vs* 45.4), a figure also confirmed by the breakdown by classes. One in ten of the female subjects were non-Italian as apposed to less than 8%. of the males. The percentages on the housing situation did not show gender differences; while, regarding marital status, the majority of males were single (47.6%) whereas the majority of females were married (47%), 13.8% of women were widows.

Males and females do not show percentual differences regarding qualifications. As far as employment is concerned, the percentage of retirees is similar, the percentage of the employed differs in so far as males are 37.2% *vs* females at 28.1%; the unemployed also differs: 18.5% males *vs* 11.3% females. The percentage of housewives is high.

With reference to the primary diagnosis, one out of three females and one out of four males suffered from a neurotic disorder; females were affected by unipolar mood disorder to a greater extent than males. Patients suffering from schizophrenic psychosis, organic disorders and substance disorders were mainly male.

Regarding the type of treatment received, there was a greater distribution in favour of males: psychotherapy treatment 9.5 *vs* 7.8%, grant jobs 5 *vs* 2.2%, socio-rehabilitation 17.3 *vs* 10.6%, acute hospitalization 26.3 *vs* 19.3%.

The analysis of the characteristics of the subjects by period of entry (Tab. II) is statistically significant for all

Table II. Cohort characteristics distributed by period of entry (1978-2014).

	≤ 1989		1990-1994		1995-1999		2000-2004		2005-2009		2010-2014		Chi²
	N	%	N	%	N	%	N	%	N	%	N	%	
Total	613	100,0	322	100,0	407	100,0	971	100,0	2,203	100,0	1460	100,0	
Mean age, DS	35,0		40,1		43,8		50,0		51,0		49,3		
≤ 17	59	9,6	5	1,6	13	3,2	14	1,4	20	0,9	14	1,0	p < 0.001
18-29	187	30,5	99	30,7	97	23,8	153	15,8	296	13,4	209	14,3	
30-39	144	23,5	67	20,8	73	17,9	171	17,6	398	18,1	243	16,6	
40-49	127	20,7	56	17,4	78	19,2	167	17,2	416	18,9	330	22,6	
50-64	84	13,7	68	21,1	85	20,9	224	23,1	469	21,3	352	24,1	
>65	12	2,0	27	8,4	61	15,0	242	24,9	604	27,4	312	21,4	
Males	253	41,3	138	42,9	177	43,5	422	43,5	888	40,3	604	41,4	0,586
Females	360	58,7	184	57,1	230	56,5	549	56,5	1315	59,7	856	58,6	
Non-natives	8	1,3	4	1,2	11	2,7	69	7,1	240	10,9	216	14,8	p < 0.001
Lives alone	97	15,8	40	12,4	54	13,3	132	13,6	381	17,3	254	17,4	p < 0.001
With others	386	63,0	250	77,6	301	74,0	761	78,4	1,720	78,1	1,162	79,6	
Facilities	127	20,7	31	9,6	50	12,3	68	7,0	76	3,4	23	1,6	
Other	3	0,5	1	0,3	2	0,5	10	1,0	26	1,2	21	1,4	
Single	299	48,8	134	41,6	184	45,2	319	32,9	707	32,1	463	31,7	p < 0.001
Married	173	28,2	119	37,0	152	37,3	418	43,0	1,032	46,8	716	49,0	
Separate/divorced	88	14,4	38	11,8	40	9,8	100	10,3	221	10,0	141	9,7	
Widower	51	8,3	30	9,3	31	7,6	110	11,3	211	9,6	128	8,8	
Other	2	0,3	1	0,3	0	0,0	24	2,5	32	1,5	12	0,8	
Low educational degree	504	82,2	236	73,3	297	73,0	703	72,4	1,609	73,0	862	59,0	p < 0.001
High educational degree	109	17,8	86	26,7	110	27,0	268	27,6	594	27,0	598	41,0	
Employed	106	17,3	90	28,0	118	29,0	305	31,4	711	32,3	577	39,5	0.000
Not employed	90	14,7	40	12,4	61	15,0	138	14,2	262	11,9	263	18,0	
Retired	330	53,8	130	40,4	163	40,0	357	36,8	799	36,3	392	26,8	
Other working condition	87	14,2	62	19,3	65	16,0	171	17,6	431	19,6	228	15,6	
Schizophrenic Psychosis	202	33,0	74	23,0	79	19,4	83	8,5	100	4,5	25	1,7	p < 0.001
Paranoid state	16	2,6	13	4,0	13	3,2	26	2,7	38	1,7	24	1,6	
Other non organic psychosis	9	1,5	6	1,9	15	3,7	18	1,9	55	2,5	34	2,3	
Major depression	60	9,8	22	6,8	35	8,6	119	12,3	267	12,1	282	19,3	
Bipolar disorder	95	15,5	54	16,8	77	18,9	144	14,8	223	10,1	138	9,5	
Neurotic disorders	96	15,7	75	23,3	93	22,9	269	27,7	827	37,5	455	31,2	
Personality disorders	15	2,4	14	4,3	17	4,2	39	4,0	80	3,6	45	3,1	
Adjustment disorders	11	1,8	6	1,9	12	2,9	43	4,4	214	9,7	280	19,2	
Others psychiatric disorders	2	0,3	0	0,0	5	1,2	6	0,6	28	1,3	20	1,4	
Organic disorders	54	8,8	15	4,7	19	4,7	52	5,4	103	4,7	57	3,9	
Substances use disorders	5	0,8	4	1,2	10	2,5	22	2,3	48	2,2	46	3,2	

▶

▶

	≤ 1989		1990-1994		1995-1999		2000-2004		2005-2009		2010-2014		Chi²
	N	%	N	%	N	%	N	%	N	%	N	%	
Non psychiatric disorders	5	0,8	0	0,0	4	1,0	5	0,5	19	0,9	54	3,7	
Missing diagnoses	43	7,0	39	12,1	28	6,9	145	14,9	201	9,1	0	0,0	
Psychoatherapeutic	76	12,4	39	12,1	50	12,3	80	8,2	158	7,2	104	7,1	p < 0.001
Day care center	9	1,5	9	2,8	10	2,5	10	1,0	17	0,8	4	0,3	p < 0.001
Work transition programs	22	3,6	24	7,5	33	8,1	38	3,9	64	2,9	20	1,4	p < 0.001
Socio-rehabilitative	212	34,6	101	31,4	114	28,0	133	13,7	177	8,0	65	4,5	p < 0.001
RTI	92	15,0	45	14,0	59	14,5	100	10,3	180	8,2	102	7,0	p < 0.001
RTR	39	6,4	20	6,2	20	4,9	35	3,6	45	2,0	25	1,7	p < 0.001
RSR	89	14,5	21	6,5	31	7,6	26	2,7	20	0,9	3	0,2	p < 0.001
SPDC/SPOI	138	22,5	83	25,8	109	26,8	195	20,1	451	20,5	349	23,9	0.006

variables except for the gender analysis. The results obtained highlight that the majority of subjects had a first access to MHC after 2000, with a greater distribution of new cases in the period between 2005 and 2009.

The average age at entry was about 50 years old, while in the past it was lower (35 years before 1989, 40.1 years from 1990 to 1994 and 43.8 years from 1995 to 2000). Also regarding the breakdown by access age, it can be noted that as the years go by, the percentages of the younger groups decrease and those of the older groups increase.

There are more females than males and this remains stable over time. Non-natives are constantly increasing, going from 1.3% in the "≤ 1989" range to 14.8% during 2010-2014.

As for the housing situation, those living with others increased from 63 to 79.6%, while those living in the structures decreased (20.7 to 1.6%).

The unmarried, who before 1989 were almost one in two, become one in three in the last five years of the study; married couples increased from 28.2 to 49%, the separated / divorced decreased slightly (from 14.4 to 9.7%), and the percentage of widows didn't change.

Over time, the level of qualifications increased, before 1989 17.8% of admissions had a high qualification, in the last five years of the study "2009-2014" the percentage doubled (41%). As regards to working conditions, the employed increased (17.3 *vs* 39.5%) and retired people decreased (53.8 *vs* 26.8%).

Access diagnoses changed over time: Monopolar patients increased (9.8 *vs* 19.3%), as did those with neurotic disorders (15.7 *vs* 31.2%) and those who had adaptation reactions (1.8 *vs* 19.2%); bipolar patients decreased (15.5 *vs* 9.5%) especially after 2000, those with an organic disorder also decreased (8.8 *vs* 3.9%).

One in five people were admitted to a SPDC/SPOI which did not change over time, while the percentage of all other treatments dropped slightly (Psychotherapeutic, Day Center, Training-Transaction at Work Program, Socio-rehabilitation, RTI, RTR, RSR).

Characteristics of the outcomes of the treatment path

On 31 December 2014 (Tab. III) subjects under treatment were 29.0%, 43.5% had given up, 19.5% had finished the treatment, 4.6% had died and 3.4 had been discharged with other outcomes. No gender differences emerged. Up to 2000, Treatment retention had a percentage of about 40% and settled in the last five years of the study at 30%, it was very low from 2005 to 2009 at 18%. Subjects who completed the treatment plan increased over the last five years of the study.

The evaluation of the outcome of the treatment highlights

Table III. Treatments outcomes percentage, divided by period of treatment.

	Total		≤ 1989		1990-1994		1995-1999		2000-2004		2005-2009		2010-2014	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total	5,976	100,0	613	100,0	322	100,0	407	100,0	971	100,0	2,203	100,0	1,460	100,0
In care	1,736	29,0	250	40,8	139	43,2	165	40,5	279	28,7	410	18,6	493	33,8
Conclusion	1,167	19,5	75	12,2	47	14,6	68	16,7	171	17,6	413	18,7	393	26,9
Abandon	2,597	43,5	186	30,3	101	31,4	133	32,7	433	44,6	1,236	56,1	508	34,8
Died	272	4,6	75	12,2	29	9,0	31	7,6	61	6,3	63	2,9	13	0,9
Other	204	3,4	27	4,4	6	1,9	10	2,5	27	2,8	81	3,7	53	3,6

Table IV. Rate ratio (RR) of treatment plan outcomes and 95% Confidence Interval (CI 95%) calculated by Poisson multiple regression containing covariates: entry period, age, duration.

		AP	Conclusion		Abandon		Death		Other	
			RR	CI 95%	RR	CI 95%	RR	CI 95%	RR	CI 95%
Entry age classes	≤ 29	5,496	1		1		1		1	
	30-39	8,773	**0,90**	0,81-1,00	1,04	0,96-1,13	**1,44**	1,12-1,83	**0,71**	0,58-0,88
	40-49	10,439	**0,88**	0,79-0,98	**1,14**	1,05-1,23	**2,13**	1,69-2,68	**0,66**	0,54-0,81
	50-64	13,514	1,02	0,92-1,12	**1,28**	1,19-1,37	**3,17**	2,54-3,96	**0,48**	0,39-0,59
	≥ 65	10,261	**1,26**	1,15-1,40	**1,89**	1,76-2,03	**5,12**	4,11-6,37	**0,72**	0,59-0,88
Entry period	≤ 2009	36,025	1		1		1		1	
	2010-2014	12,457	**1,37**	1,29-1,45	**0,74**	0,70-0,77	**0,28**	0,24-0,32	0,93	0,81-1,08
Duration	0-4 anni	19,022	1		1		1		1	
	5-9 anni	11,196	**0,80**	0,74-0,86	**0,67**	0,64-0,71	**1,21**	1,07-1,36	**0,86**	0,73-1,01
	10-14 anni	6,995	**0,75**	0,68-0,82	**0,59**	0,55-0,63	**1,34**	1,18-1,53	**0,83**	0,68-1,01
	≥ 15 anni	11,270	**0,60**	0,55-0,65	**0,51**	0,49-0,54	**1,47**	1,32-1,64	**1,18**	1,01-1,38

four different profiles in relation to the four types (conclusion, abandonment, death in treatment, other).
In the first model (Tab. IV) the analysis concerned the time-dependent variables (age at first consultation, period, duration) and is statistically significant: the risk of concluding increased after the age of fifty, for those who had a recent access in 2010 and decreased with subjects having a longer treatment duration; the risk of dropping out increased with age, in the periods prior to 2009 and decreased with subjects who have a longer treatment duration; death under treatment had a greater risk for those who entered with an advanced age, but for whom the treatment lasted longer, while it decreased for those who entered after 2010; the risk of having another outcome was lower for people over 65, for those who had an access period after 2010 and for those who had a process that lasted between 5 and 15 years.
In the second model (Tab. V) the following socio-demographic variables were analyzed: sex, nationality,

Table V. Rate ratio (RR) of treatment plan outcomes and 95% Confidence Interval (CI 95%) calculated by Poisson multiple regression containing covariates: gender, nationality, civil status, living condition, educational degress, working condition, primary diagnosis and hospitalization in SPDC.

		AP	Conclusion		Abandon		Death		Other	
			RR	CI 95%	RR	CI 95%	RR	CI 95%	RR	CI 95%
Sex	Male	20,522	1		1		1		1	
	Female	27,961	**1,09**	1,03-1,16	0,99	0,95-1,03	**0,61**	0,55-0,66	1,08	0,98-1,20
Non natives	No	46,337	1		1		1		1	
	Yes	2,145	1,02	0,89-1,16	**1,49**	1,39-1,61	**0,41**	0,29-0,59	**1,53**	1,27-1,85
Civil status	Single	21,160	1		1		1		1	
	Married	17,502	**1,46**	1,36-1,57	**1,25**	1,20-1,32	**1,13**	1,01-1,27	1,04	0,92-1,17
	Separate/ divorced	5,923	1,06	0,97-1,18	**1,17**	1,10-1,25	0,97	0,83-1,12	0,93	0,78-1,10
	Widower	3,736	**1,44**	1,29-1,62	**1,44**	1,35-1,54	**1,23**	1,06-1,43	0,88	0,72-1,09
	Other	161	**3,17**	2,44-4,49	1,11	0,88-1,42	**4,82**	3,42-6,80	1,80	0,98-3,30
Living situation	Alone	6,890	1		1		1		1	
	With other	35,445	**0,82**	0,75-0,89	**0,92**	0,87-0,98	**0,81**	0,70-0,94	1,18	1,01-1,39
	Facilities	5,843	**0,45**	0,39-0,52	**0,59**	0,55-0,65	**3,22**	2,80-3,71	1,02	0,82-1,26
	Other	304	0,84	0,58-1,23	**0,71**	0,55-0,93	**0,42**	0,21-0,82	2,21	1,42-3,45

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▶

		AP	Conclusion		Abandon		Death		Other	
			RR	CI 95%	RR	CI 95%	RR	CI 95%	RR	CI 95%
Educational degree	Low	36,311	1		1		1		1	
	High	12,171	1,04	0,98-1,12	1,01	0,97-1,06	**0,68**	0,60-0,76	**0,79**	0,69-0,90
Working condition	Employed	12,794	1		1		1		1	
	Unemployed	7,620	1,00	0,91-1,10	**0,75**	0,71-0,81	**1,83**	1,55-2,14	**0,84**	0,71-0,99
	Retired	20,144	0,94	0,88-1,02	1,01	0,97-1,06	**1,66**	1,44-1,91	**0,85**	0,75-0,96
	Other	7,925	0,96	0,88-1,05	0,97	0,92-1,03	1	0,83-1,21	0,92	0,79-1,07
Primary diagnosis	Severe Psychiatric Disorders	26,987	1		1		1		1	
	Minor Psychiatric Disorders	14,442	**1,67**	1,58-1,79	**1,97**	1,89-2,06	**0,48**	0,42-0,54	**3,81**	3,34-4,35
	Other	4,780	**1,95**	1,78-2,14	**1,82**	1,72-1,94	**0,45**	0,39-0,53	**7,06**	6,12-8,15
SPDC	No	13,084	**1**		**1**		**1**		**1**	
	Yes	21,160	**0,86**	0,81-0,93	**0,45**	0,43-0,48	**0,8**	0,71-0,89	**0,44**	0,38-0,52

marital status, housing situation, qualifications, working conditions, prevalent diagnosis and hospitalization in SPDC.

The risk of completing the treatment process was higher, in a statistically significant way, for females, the married, widows and for those with minor psychiatric disorders or other disorders, while it was lower for those who lived with others or in facilities, for those who were retired and for those who had had at least one hospitalization in the SPDC.

The risk of abandoning the process was higher for those not born in Italy, the married, the separated and the widowed, and for those suffering from minor psychiatric disorders or other disorders; on the contrary, the risk of drop-pot was lower for those who lived in structures or in an undefined housing situations, those who were unemployed and who had had at least one hospitalization in the SPDC.

The risk of death in treatment was higher for the married, widowed, those who lived in a structure, the unemployed, and pensioners; it was lower for females, non-natives, those who lived with others, those with a higher qualification, those suffering from minor psychiatric disorders and those who had had at least one hospitalization in SPDC.

The risk of having an "other" outcome was higher for those not born in Italy, those who lived with others or in structures, those who do not have major psychiatric disorders; while there was a lower risk for those with a higher qualification, those who were unemployed, retirees and those who had had a hospitalization in SPDC.

Conclusions

The evaluation of the effectiveness of the different types of therapeutic interventions offered to patients suffering from mental disorders related to the CSM of Forlì produced specific profiles, depending on the outcome of the clinical approach. The limit of the study is that the outcome is established by the psychiatrist, according to trend of the treatment plan, based not only on objective elements but also subjective elements.

The treatment plans of 5,976 adults, in the period from 1978 to 2014, residing in the Forlì area, were analyzed. The socio-demographic predictors relating to access to services are the fact of having an average age and being married as reported in the literature [1,5,6].

From the analysis by period of entry, it is clear that the majority of subjects had a first access to the CSM after 2000, with a greater distribution of new cases in the period between 2005 and 2009; we could hypothesize that this incidence is determined by an increase in specialist referrals by GPs. This is the result of the Leggieri project, launched in 2004, which has fostered a greater awareness of GPs regarding psychiatric pathologies, through an organizational integration between primary care and psychiatrists of the mental health centers, in order to respond more effectively the person's needs. Another hypothesis that could explain this division is the growing computerization of medical records started in 2006, which has facilitated the compilation of patient records.

Despite the age of the target population of CSM being between 18 and 65 years old, observation of the patient's age at the first access shows a significant percentage of over sixty-fives (one in five); this data is visible from 2000 onwards, a date which coincides with the progressive development of the culture of territorial mental health promotion. This result could on the one hand constitute an attitude of individual and social stigmatization of psychiatric symptoms that are attributed primarily to personal characteristics rather than to psychiatric illnesses, thus delaying the request for help. In literature it is reported that people with a psychiatric pathology preferably turn to other

local services before arriving at specialized mental health services [1,8]. On the other hand, it is possible to hypothesize a late recognition of the symptoms by the referrers, mostly General Practitioners, who tend to underestimate and misdiagnose the syndromic presentation.

It is also observed that over time the accesses of subjects receiving a diagnosis of "major depression", "neurotic disorders", according with literature [9], and adjustment disorders increased; this distribution can be attributed to a growing culture of territorial mental health carried out through public opinion awareness campaigns. This approach is now consolidated and present in some states of Europe and America [5]. Another possible explanation may be linked to a more specific diagnostic attitude on the part of the psychiatrist.

Regarding the care available, it is important to note a statistically significant reduction over time in rehabilitation hospitalization, going from 14.5% in the period prior to 1989 to 0.2% in the 2000-2004 period. This trend could testify to the progressive cultural change, promoted by the Emilia Romagna Region, in continuity with the "National action plan for mental health" of 2010, according to which inclusion in a facility is no longer a definitive solution for the patient's life, but a temporary therapeutic-rehabilitative programme.

The analysis of the outcomes of the treatment plan shows that a third of the subjects remained in treatment, four out of ten abandoned, and two out of five completed the treatment. Treatment retention appears to have had a decreasing trend, with very low values (18%) from 2005 to 2009, this data corresponds with the increasing practise to conclude treatments according with the "Stepped Care" model diffusion, promoted by the regional program "Giuseppe Leggieri". The model is based on the gradualness of the treatment plan, favouring the integration between general practitioners and the public service and results in the treatment retention of the most serious cases, as reported in the multicentre study of countries belonging to the WHO World Mental Health Survey Consortium [10].

The integrated collaboration with general practitioners is effective on the prevention, but also on the prognosis of mental disorders, as verified in literature especially for major disorders [7,8].

The evaluation of the outcome of the treatment highlights four different profiles of subjects, depending on the type of discharge from the service. The risk of a patient terminating their treatment plan is statistically significantly higher for females, the married, widows and those with minor psychiatric or other disorders and increases after the age of fifty. The latter fact seems to be partly due to the referral to other specialised services for the onset of comorbidities in medical pathologies

Finally, it is noted that patients who had a first access in the period between 2010 and 2014 had a greater risk of completing the plan than those who entered before 2009, this could be attributed to the presence of a mild psychopathological presentation, which is discharged and sent back to the general practitioner.

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