



Compulsory admission as access to early intervention service for patients with first episode psychosis: What relevance for clinical outcomes? Further findings from the Pr-EP program

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ABSTRACT

Purpose: Patients with psychosis have a higher risk of compulsory admission. However, knowledge about its prognostic relevance in First Episode Psychosis (FEP) is poor. The aims of this study were to calculate its baseline prevalence rate in FEP individuals treated within an “Early Intervention” (EI) service, and to longitudinally compare clinical outcomes between FEP patients with and without baseline compulsory admission across 2 years of follow-up.

Methods: 500 FEP youths completed the PANSS and the GAF. Chi-squared/Mann-Whitney tests, mixed-design ANOVA, logistic regression, and Kaplan-Meier survival analysis were used for inter-group comparisons.

Results: 53 (10.6 %) FEP participants were compulsory admitted at entry. They were likely to be unemployed and to have lower baseline GAF score and more severe positive symptoms. They showed significant “time x group” effects for improvements in GAF and PANSS uncooperativeness scores. No inter-group difference in terms of service disengagement and new compulsory admission was found.

Conclusion: A non-negligible portion (1/10) of FEP participants entered the EI program through compulsory admission. However, this did not negatively impact on longitudinal outcomes, suggesting the beneficial effect of EI intervention in longitudinally promoting functional recovery and treatment adherence also in FEP recruited through compulsory admission.

1. Introduction

Increasing evidence suggested that individuals with First Episode Psychosis (FEP) may have undesirable care pathways that include a potentially higher risk of *compulsory hospital admission* (Addington et al., 2002). In this respect, empirical research showed that just over a third of FEP subjects enrolled within a specialized Early Intervention in Psychosis (EIP) service in New Zealand had compulsory admission in six months prior to their referral to the service (Turner et al., 2006). However, knowledge about prognostic relevance of compulsory treatment as access in specialized EIP programs on outcome parameters currently is very poor. The few studies (most of them conducted in the UK) indicated history of continuous offending behavior, prolonged

substance abuse, lower longitudinal functioning, and poorer insight as predisposing factors for new compulsory admission in FEP individuals treated in EIP services (Patel et al., 2015; Ajnakina et al., 2018; Oduola et al., 2019), although with contrasting evidence (Rodriguez et al., 2019). Therefore, new studies should quickly fill this prognostic knowledge gap.

In this respect, we previously examined incidence rate and baseline predictors of new compulsory treatment in an Italian EIP protocol across a 2-year follow-up (Pelizza et al., 2025), but without exploring the prognostic role and impact of this brutal experience at entry on subsequent clinical outcomes. We would like to deepen our knowledge of these prognostic aspects in this short communication. In particular, can a stable retention in care or an effective therapeutic alliance be

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definitely compromised? Can it lead to unfavorable care pathway? Or is it possible to achieve a satisfying personal, clinical, and functional recovery? Therefore, the specific *aim* of this investigation was to compare a broad range of outcome parameters between FEP patients with and without compulsory admission as source of referral to a specialized EIP service during a 2-year follow-up period.

2. Methods

2.1. Participants and setting

All FEP participants entered the “Parma-Early Psychosis” (Pr-EP) EIP protocol from January 2013 to December 2022 (Pelizza et al., 2022a). *Inclusion criteria* were: (a) age 12–35 years; (b) specialist help-seeking behavior; (c) recruitment in the Pr-EP protocol; (d) baseline presence of FEP within one of the following DSM-5 diagnoses (APA, 2013): schizophrenia, major depressive disorder with psychotic features, bipolar disorder with psychotic features, brief psychotic disorder, delusional disorder, schizophreniform disorder, and psychotic disorder not otherwise specified (NOS); and (e) a “Duration of Untreated Psychosis” (DUP) of < 2 years. *Exclusion criteria* were: (a) past episode of DSM-5 (non-affective or affective) psychosis; (b) past exposure to AP medication; (c) known intellectual disability (i.e., IQ < 70); and (d) neurological or any other medical condition manifesting with psychiatric symptoms. Past AP exposure (i.e., at any dosage and at any time before the Pr-EP recruitment) was considered as “functional equivalent” of a past psychotic episode (Zoghbi et al., 2019).

All individuals and their parents (if minors) gave their written informed consent prior to their inclusion in the study. Local relevant ethical approvals were obtained (AVEN Ethics Committee protocol n. 36 102/2019). This study was also conducted in accordance with the Code of Ethics of the World Medical Association (1964 Declaration of Helsinki and its later amendments).

2.2. Assessment

A sociodemographic/clinical *chart* was completed at baseline and across the follow-up period (see supplementary materials [Table S1] for details on outcomes’ definitions: i.e., suicide attempt, self-harm behavior, current suicidal ideation, functional recovery, and service disengagement) (Pelizza et al., 2023a).

The psychopathological assessment included the Positive And Negative Syndrome Scale (PANSS) (Kay et al., 1987) and the Global Assessment of Functioning (GAF) scale (APA, 2013). They were completed by trained Pr-EP team members both at baseline and every 12 months during the 2-year follow-up period. Regular supervision sessions and scoring workshops were implemented to ensure inter-rater reliability (Pelizza et al., 2021a).

The PANSS is a clinical interview commonly used to assess psychopathology in FEP populations (Pelizza et al., 2021b). As proposed by Shafer and Dazzi (2019), we considered 5 main psychopathological domains: “Negative Symptoms”, “Affect” (“Depression/Anxiety”), “Positive Symptoms”, “Disorganization”, and “Resistance/Excitement-Activity”. As index of symptomatic remission, we also considered a score of ≤ 3 on the 8 PANSS items indicated in the “Remission in Schizophrenia Working Group’s” criteria (Andreasen et al., 2005; Pelizza et al., 2023b).

The GAF is a widely used scale for measuring daily functioning in patients with FEP (Pelizza et al., 2022b). According to Yang and colleagues (2022), we considered a GAF score of > 60 at follow-ups as current index of functional remission (Pelizza et al., 2022c).

2.3. Procedures

The DSM-5 *diagnosis* was formulated at entry by at least two trained Pr-EP team members using the Structured Clinical Interview for DSM-5

mental disorders (SCID-5) (First et al., 2016). The baseline presence of FEP was confirmed using the psychometric criteria of the “Comprehensive Assessment of At-Risk Mental States” (CAARMS), authorized Italian version (Pelizza et al., 2023c). FEP patients with baseline *compulsory admission* were included in the FEP/CA subgroup. The remaining participants were grouped in the FEP- subsample.

The *Pr-EP program* provides a 2-year comprehensive treatment package including psychopharmacological therapy and a multi-element psychosocial intervention combining individual psychotherapy, psychoeducational sessions for family members, and a recovery-oriented case management (Pelizza et al., 2023d), in accordance with the current guidelines on EIP (Cotton et al., 2022; RER, 2024).

Low-dose atypical AP *medication* was used as first-line treatment (Lian et al., 2022; Pelizza et al., 2024). Selective serotonin re-uptake inhibitor and benzodiazepine could be prescribed in case of mood changes, anxiety, or insomnia (Crouse et al., 2021). *Individual psychotherapy* was developed on cognitive-behavioral modules for psychotic disorders (Sönmez et al., 2020). *Family intervention* was based on cognitive-behavioral model for early psychosis (Rodolico et al., 2022). Finally, each participant/family had a dedicated *case manager* to provide an early recovery-oriented rehabilitation and to coordinate all interventions planned (Belvederi Murri et al., 2023; Pelizza et al., 2023e).

Inter-group comparisons were conducted to examine differences in terms of sociodemographic/clinical characteristics at entry and longitudinal outcomes across the follow-up.

2.4. Statistical analysis

Collected data were analyzed using the Statistical Package for Social Science (SPSS) for Windows, version 15.0 (SPSS Inc., 2010). All tests were two-tailed, with a significance level set at 0.05. At baseline, qualitative variables were examined using the Chi-squared (X^2) test or the Fisher exact test (as appropriate), while quantitative variables using the Mann-Whitney U test. Cumulative proportional risk rates of new compulsory admission were also investigated using the Kaplan-Meier survival analysis, taking into account the time of survival (in months) among FEP participants entered the 2-year follow-up period (Dey et al., 2022).

Statistically relevant between-group comparisons on time-to-event clinical outcomes were explored using Cox regression analysis, while comparisons on not time-to-event clinical outcomes using binary logistic regression (Bender, 2009; Riley et al., 2019). Finally, mixed-design ANOVA was performed to investigate both time and group effects on psychopathological and clinical parameters over time (Meier, 2022).

3. Results

A total of 500 FEP participants were enrolled in this research: of them, 53 (10.6 %) were compulsory admitted at presentation (see also Supplementary Materials [Table S2] for details on prevalence rates of FEP patients with baseline hospitalization). This finding represented 24.1 % of the 220 total hospitalizations at entry. Sociodemographic and clinical characteristics of the two FEP subgroups are shown in the Table 1.

3.1. Baseline data

Compared to FEP-, FEP/CA participants showed higher prevalence rates of individuals “Not engaged in Education, Employment or Training” (NEET), emergency room as source referral (with lower rates of self-referral and referral by primary care), and schizophrenia as baseline DSM-5 diagnosis (Table 1). They also had lower GAF score and higher equivalent dose of AP medication at entry, as well as higher PANSS “Positive Symptoms” and “Resistance/Excitement-activity” factor scores. As for specific psychopathological features, FEP/CA subjects showed higher PANSS “Hostility” (3.51 ± 1.85 vs 2.75 ± 1.66 , $z =$

Table 1
Sociodemographic and clinical comparisons in the two FEP subgroups ($n = 500$).

Variable	FEP/CA ($n = 53$)	FEP- ($n = 447$)	χ^2/z	p
Gender (males)	39 (73.7%)	277 (62.0%)	2.749	.097
Ethnic group (white Caucasian)	43 (81.1%)	377 (84.3%)	.363	.547
Migrant Status	13 (24.5%)	110 (24.6%)	.001	.999
Age (at entry)	26.83 $\pm$ 6.99	26.46 $\pm$ 9.30	-1.335	.182
Education (in years)	11.43 $\pm$ 2.63	11.59 $\pm$ 2.89	-.324	.746
Civil status			1.458	.227
Single	49 (95.2%)	393 (87.9%)	[1.0]	
Married/partnership	4 (7.5%)	45 (10.1%)	[-.6]	
Separated/divorced	0 (0.0%)	9 (2.0%)	[-1.3]	
Living status			.723	.395
Alone	3 (5.7%)	29 (6.5%)	[-.3]	
Living with partners	5 (9.4%)	54 (12.1%)	[-.6]	
Living with parents	38 (80.6%)	319 (80.4%)	[1.1]	
Other cohabitation	7 (13.3%)	45 (10.1%)	[1.1]	
Occupation			11.134	.049
NEET	37 (69.9%)	223 (49.9%)	[2.3]	
Student	7 (13.1%)	128 (28.6%)	[-2.4]	
Employed	9 (17.0%)	96 (21.5%)	[-.7]	
Source of referral			44.497	.0001
Primary care	5 (9.4%)	151 (33.9%)	[-3.6]	
Family members	9 (17.0%)	50 (11.2%)	[1.2]	
Self-referral	0 (0.0%)	33 (7.4%)	[-2.1]	
Emergency room	31 (58.5%)	126 (28.2%)	[2.2]	
School/Social services	3 (5.7%)	16 (3.6%)	[.7]	
Other mental health services	5 (9.4%)	71 (15.7%)	[-.9]	
DUP (in months)	42.68 $\pm$ 50.80	39.76 $\pm$ 39.27	-.754	.451
Family history for psychosis (in first-degree relatives)	11 (20.7%)	173 (38.7%)	3.416	.065
Past specialist contact	22 (41.5%)	199 (44.5%)	.174	.677
Previous suicide attempts	4 (7.4%)	48 (10.7%)	.518	.472
Substance misuse at entry	23 (43.4%)	166 (37.1%)	.790	.374
Treatments				
Baseline AP prescription	49 (92.5%)	382 (85.5%)	1.949	.163
Baseline equivalent dose of risperidone (mg/day)	5.40 $\pm$ 4.32	3.22 $\pm$ 2.14	-4.298	.0001
Baseline AD prescription	9 (17.0%)	86 (19.2%)	.157	.692
Baseline equivalent dose of fluoxetine (mg/day)	32.78 $\pm$ 14.54	30.87 $\pm$ 14.45	-.410	.682
Baseline MS prescription	10 (18.9%)	59 (13.2%)	1.280	.258
Baseline dose of lithium (mg/day)	600.00 $\pm$ 264.57	613.56 $\pm$ 286.15	-.183	.855
Baseline BDZ prescription	19 (35.8%)	154 (34.5%)	.041	.840
Baseline equivalent dose of lorazepam (mg/day)	3.54 $\pm$ 2.30	2.81 $\pm$ 1.99	-1.364	.173
Baseline acceptance of individual psychotherapy	38 (86.4%)	357 (85.0%)	.059	.809
Baseline acceptance of family psychoeducation	32 (72.7%)	284 (67.6%)	.478	.489
Baseline acceptance of case management	39 (88.6%)	348 (82.9%)	.961	.327
Baseline DSM-5 diagnosis			14.449	.038

Table 1 (continued)

Variable	FEP/CA ($n = 53$)	FEP- ($n = 447$)	χ^2/z	p
Schizophrenia	26 (49.1%)	139 (31.1%)	[2.6]	
Affective psychosis	9 (17.0%)	73 (16.3%)	[.1]	
Brief psychotic disorder	3 (5.7%)	56 (12.5%)	[-1.6]	
Psychotic disorder NOS	6 (11.3%)	83 (18.7%)	[-.9]	
Schizoaffective disorder	3 (5.7%)	10 (2.2%)	[1.5]	
Delusional disorder	0 (0.0%)	14 (3.1%)	[-1.3]	
Schizophreniform disorder	6 (11.3%)	72 (16.1%)	[-.9]	
Baseline PANSS scores				
Positive Symptoms	19.87 $\pm$ 6.43	17.67 $\pm$ 6.42	-2.009	.045
Negative Symptoms	23.54 $\pm$ 7.64	22.76 $\pm$ 8.34	-.665	.506
Disorganization	21.49 $\pm$ 6.09	20.74 $\pm$ 7.87	-.888	.375
Affect	16.21 $\pm$ 6.33	16.16 $\pm$ 5.40	-.209	.835
Resistance/Excitement-activity	11.69 $\pm$ 5.07	10.09 $\pm$ 4.94	-2.105	.044
PANSS total score	96.90 $\pm$ 23.61	90.71 $\pm$ 23.87	-1.415	.157
Baseline GAF score	39.97 $\pm$ 10.59	44.77 $\pm$ 9.98	-2.468	.014
Cumulative incidence rate				
1-year service disengagement	8 (15.1%)	62 (13.0%)	.775	.481
2-year service disengagement	15 (28.3%)	135 (28.4%)	.020	.897
1-year new attempted suicide	4 (7.5%)	14 (3.1%)	2.662	.112
2-year new attempted suicide	4 (7.5%)	19 (4.3%)	1.173	.290
1-year new hospitalization	12 (22.6%)	78 (17.4%)	.865	.352
2-year new hospitalization	17 (32.1%)	100 (22.4%)	2.489	.115
1-year new compulsory admission	3 (5.7%)	22 (4.9%)	.054	.740
2-year new compulsory admission	5 (9.4%)	25 (5.6%)	1.240	.233

Note. FEP = First Episode Psychosis; FEP/CA = FEP patients with baseline compulsory admission; FEP- = FEP patients without baseline compulsory admission; NEET = Not in Education, Employment, nor Training; DUP = Duration of Untreated Psychosis; AP = Antipsychotic medication; AD = Anti-depressant medication; MS = Mood Stabilizer; BDZ = Benzodiazepine; DSM-5 = Diagnostic and Statistical Manual of mental disorders - 5th Edition; PANSS = Positive And Negative Syndrome Scale; GAF = Global Assessment of Functioning; HoNOS = Health of the Nation Outcome Scale. Frequencies (and percentages) and mean $\pm$ standard deviation are reported. Chi-square (χ^2) test (with adjusted residuals in square brackets) and Mann-Whitney (z) test values are reported. Bonferroni's corrected p values are reported. Statistically significant p values are in bold.

-2.486, $p = 0.013$) and "Uncooperativeness" (3.21 $\pm$ 2.10 vs 2.48 $\pm$ 1.66, $z = -2.043$, $p = 0.041$) item subscores in comparison with FEP- ones.

3.2. Longitudinal data

Over the course of this investigation, 150 FEP participants dropped out the Pr-EP program (70 during the first year of intervention). No statistically significant inter-group differences in terms of service disengagement, new hospitalization, new compulsory admission, and new attempted suicide were observed (Table 2).

Furthermore, no statistically relevant between-group difference in terms of current suicidal ideation, new self-harm behavior, GAF functional remission, and PANSS symptomatic remission was found (Table 3).

Finally, mixed-design ANOVA analysis results showed a statistically significant effect of time on all PANSS and GAF scores (Table 4). Moreover, statistically relevant "time x group" effects for PANSS "Hostility" and "Uncooperativeness" item subscores, as well as for GAF scores were also observed. Specifically, compared to FEP-, FEP/CA participants

Table 2

Cox regression analysis results: comparison on 2-year outcome incidence rates among the two FEP subgroups.

FEP subgroup	1-cumulative proportion surviving at the time		Mean (in months) for 2-year service disengagement incidence rate			
	Estimate	SE	Estimate	SE	95% CI	
					Lower bound	Upper bound
FEP/CA	.340	.065	19.321	.947	17.464	21.177
FEP-	.286	.021	20.407	.288	19.843	20.972
(Overall)	-	-	20.292	.277	19.749	20.835
Log Rank (Mantel-Cox)			X ²	df	p	
			.942	1	.332	
FEP subgroup	1-cumulative proportion surviving at the time	Mean (in months) for 2-year new suicide attempt rate				
		Estimate	SE	95% CI		
				Lower bound	Upper bound	
FEP/CA	.327	.065	19.485	.957	17.609	21.361
FEP-	.268	.021	20.628	.285	20.069	21.187
(Overall)	-	-	20.506	.275	19.968	21.045
Log Rank (Mantel-Cox)			X ²	df	p	
			1.451	1	.228	
FEP subgroup	1-cumulative proportion surviving at the time	Mean (in months) for 2-year new hospitalization incidence rate				
		Estimate	SE	95% CI		
				Lower bound	Upper bound	
FEP/CA	.376	.073	20.627	.822	19.015	22.239
FEP-	.255	.022	21.731	.232	21.276	22.186
(Overall)	-	-	21.617	.224	21.178	22.057
Log Rank (Mantel-Cox)			X ²	df	p	
			3.284	1	.070	
FEP subgroup	1-cumulative proportion surviving at the time	Mean (in months) for 2-year new compulsory admission rate				
		Estimate	SE	95% CI		
				Lower bound	Upper bound	
FEP/CA	.118	.050	23.217	.488	22.260	24.175
FEP-	.062	.012	23.361	.135	23.096	23.626
(Overall)	-	-	23.346	.129	23.093	23.600
Log Rank (Mantel-Cox)			X ²	df	p	
			1.550	1	.213	

Note. FEP = First Episode Psychosis; FEP/CA = First Episode Psychosis with baseline compulsory admission; FEP- = First Episode Psychosis without baseline compulsory admission; SE = Standard Error; 95 % CI = 95 % Confidence Intervals; Log Rank = Logarithm Rank Test; = Chi-Square test; df = degrees of freedom; p = statistical value.

had higher improvement in both GAF scores and PANSS “Hostility” and “Uncooperativeness” item subscores (see Supplementary Materials [Figure S1] for details on profile plots).

4. Discussion

The results of this investigation showed that a non-negligible portion (about 10 %) of our FEP participants were *compulsory admitted* at baseline. This finding is lower than what (31 %) was reported in a previous pioneering UK investigation on first-admitted individuals with FEP (Cole et al., 1995). These discrepancies could be explained by differences in the age of recruitment, in the years in which the research was conducted, and in mental health legislation among countries.

However, as the first contact of FEP patients with mental health services is crucial for their subsequent adherence to care (Nosè et al.,

2003), a referral occurring with compulsory admission often represents a major public health issue, and specifically a traumatic event for both the patient and his/her family members, and a potentially problematic hurdle for treatment continuity over time (Daneault et al., 2019). Therefore, it is crucial to adequately train mental healthcare clinicians to enhance their assertive skills and to improve their ability in favoring therapeutic alliance and patients’ motivation to care (Poletti et al., 2022).

As for baseline characteristics, our FEP/CA participants showed a *lower socio-occupational functioning* than FEP- ones (i.e., more NEET individuals and lower GAF score). This is in line with what was observed in FEP patients being under community treatment order at least once during their EIP intervention at the “Early Psychosis Prevention and Intervention Centre” (EPPIC) in Melbourne (Australia) (Morandi et al., 2017), also indicating a lower pre-morbid functioning in the FEP/CA

Table 3

Binary logistic regression analysis results for 2-year not time-to-event outcome variables in the two FEP subgroups.

Dependent variable	FEP/CA (n=45)	FEP- (n=416)	Statistic test				p
			B (SE)	HR	95% CI		
					Lower	Higher	
1-year current suicidal ideation	12 (26.7%)	162 (38.9%)	-.562 (.352)	.570	.286	1.136	.110
1-year functional recovery	19 (42.2%)	231 (55.5%)	.536 (.318)	1.709	.917	3.184	.092
1-year GAF functional remission	19 (42.2%)	182 (43.8%)	.062 (.318)	1.064	.571	1.983	.844
1-year PANSS symptomatic remission	27 (60.0%)	296 (71.2%)	-.497 (.323)	.608	.323	1.145	.124
1-year new self-harm behavior	9 (20.0%)	58 (13.9%)	.434 (.399)	1.543	.706	3.371	.277
Dependent variable	FEP/CA (n=38)	FEP- (n=342)	Statistic test				p
			B (SE)	HR	95% CI		
					Lower	Higher	
2-year current suicidal ideation	5 (13.2%)	65 (19.0%)	-.437 (.499)	.646	.243	1.718	.381
2-year functional recovery	27 (71.1%)	285 (83.3%)	.711 (.386)	2.037	.956	4.341	.065
2-year GAF functional remission	21 (55.3%)	205 (59.9%)	.192 (.344)	1.211	.617	2.379	.578
2-year PANSS symptomatic remission	19 (51.4%)	156 (45.6%)	-.230 (.346)	.795	.403	1.567	.507
2-year new self-harm behavior	3 (7.9%)	21 (6.1%)	.270 (.642)	1.310	.372	4.615	.674

Note. FEP = First Episode Psychosis; FEP/CA = FEP patients with baseline compulsory admission; FEP- = FEP patients without baseline compulsory admission; GAF = Global Assessment of Functioning; HoNOS = Health of the Nation Outcome Scale; PANSS = Positive And Negative Syndrome Scale; B = regression coefficient, SE = Standard Error; HR = Hazard Ratio; 95 % CI = 95 % confidence intervals for HR; p = statistical significance. Significant statistical p values are in bold. Cumulative incidence rates are reported.

Current suicidal ideation = BPRS item 4 score ≥ 3 ; Functional recovery = return to work/school; GAF functional remission = GAF score ≥ 60 ; PANSS symptomatic remission = PANSS item P1, P2, P3, N1, N4, N6, G5, G9 subscores ≤ 3 .

Table 4

Mixed-design ANOVA results: psychopathological and outcome parameters across the 2-year follow-up period in the two FEP subgroups.

Variable	Time effect				Group effect				Interaction effect (time x group)			
	df	F	p	η^2	df	F	p	η^2	df	F	p	η^2
PANSS Positive symptoms	1.6	113.128	.0001	.331	1	1.260	.263	.005	1.6	.840	.432	.004
PANSS Negative symptoms	1.8	55.885	.0001	.197	1	.533	.466	.002	1.8	.008	.988	.001
PANSS Disorganization	1.5	94.212	.0001	.294	1	.013	.909	.001	1.5	1.080	.327	.005
PANSS Affect	1.7	78.945	.0001	.256	1	.001	.989	.001	1.7	.002	.995	.001
PANSS Resistance/Excitement	1.5	66.297	.0001	.225	1	.398	.529	.002	1.5	.664	.474	.003
PANSS Total score	1.7	139.463	.0001	.382	1	.531	.467	.002	1.7	.425	.621	.002
PANSS P7 "Hostility"	1.6	42.544	.0001	.157	1	.246	.620	.001	1.6	3.284	.049	.014
PANSS G8 "Uncooperativeness"	1.5	22.492	.0001	.089	1	1.894	.170	.008	1.5	3.785	.034	.016
PANSS G12 "Lack of judgment/insight"	1.6	33.693	.0001	.128	1	3.198	.075	.014	1.6	.669	.481	.003
GAF score	1.9	128.055	.0001	.387	1	.006	.947	.001	1.9	3.553	.031	.017
Variable	EMM (SE)											
	FEP/CA		FEP-									
T0 PANSS G8 "Uncooperativeness"	3.143 (.322)		2.399 (.120)									
T1 PANSS G8 "Uncooperativeness"	2.321 (.279)		1.995 (.104)									
T2 PANSS G8 "Uncooperativeness"	1.964 (.261)		1.921 (.097)									
T0 PANSS P7 "Hostility"	3.357 (.317)		2.739 (.118)									
T1 PANSS P7 "Hostility"	2.464 (.275)		2.094 (.102)									
T2 PANSS P7 "Hostility"	1.821 (.240)		1.872 (.089)									
T0 GAF score	40.950 (2.094)		44.497 (.688)									
T1 GAF score	58.150 (2.584)		58.097 (.850)									
T2 GAF score	66.650 (2.538)		62.692 (.835)									

Note. As all Mauchly's tests of sphericity are statistically significant ($p < 0.05$), Greenhouse–Geisser corrected degrees of freedom to assess the significance of the corresponding F value are used. Statistically significant p values are in bold. Statistical trends in p value ($p < 0.01$) are underlined. ANOVA = analysis of variance; FEP/CA = First Episode Psychosis with baseline compulsory admission; FEP- = First Episode Psychosis without baseline compulsory admission; PANSS = Positive And Negative Syndrome Scale; df = degrees of freedom; $F = F$ statistic value; GAF = Global Assessment of Functioning; p = statistical significance; η^2 = partial eta squared; EMM = Estimated Marginal Mean; SE = Standard Error; T0 = baseline assessment; T1 = 1-year assessment time; T2 = 2-year assessment time. Bonferroni's corrected p values are reported. Statistically significant p values are in bold.

subgroup.

Contrary to our results, the findings of empirical research on compulsory admission at first presentation to services for psychosis in south London showed ethnic differences, with three times higher prevalence rates in black African or Caribbean subjects than in white British ones (Morgan et al., 2005; Odoula et al., 2019). This discrepancy may be due to differences in migration patterns and health integration process among Italy and UK (Tarricone et al., 2023).

In comparison with FEP-, FEP/CA participants had a higher

prevalence rate of *emergency room* as source referral to the Pr-EP program (and consequently lower rates of self-referral and referral by primary care setting). Our results clearly support that compulsory treatment is associated with unfavorable care pathways and the absence of general practitioner's involvement (Szmukler, 1981; Cougnard et al., 2004).

Our findings also confirm higher levels of psychosis *psychopathology* at entry in FEP/CA participants compared to FEP- ones (especially in positive symptoms), also related to higher baseline equivalent dose of

AP drug and greater hostility and uncooperativeness. This is substantially in line with what was reported in the EPPIC sample (Morandi et al., 2017).

Furthermore, a higher prevalence rate of *schizophrenia* as DSM-5 primary diagnosis at baseline in FEP/CA participants in comparison with FEP- patients was also found. This could indirectly indicate that this diagnosis is a proxy measure for factors not directly assessed in the study, such as poor insight levels or lack of/inadequate social support (Cougnard et al., 2004; Verdoux et al., 2001). In this respect, our FEP/CA participants showed higher baseline PANSS “*Lack of judgment and insight*” item subscore in comparison with FEP- ones (4.10 ± 2.00 vs 3.26 ± 1.93 ; $z = -2.572$; $p = 0.010$).

Notably, no inter-group difference in 2-year incidence rate of new compulsory admission and new hospitalization was found in our FEP population. This suggests that retention in care within the Pr-EP program may potentially improve treatment adherence and avoid further hospitalization. In this respect, our mixed-design ANOVA results interestingly showed a significant “time x group” effect on longitudinal improvement in severity levels of *hostility* and *uncooperativeness* (as measured by PANSS items) in the FEP/CA subgroup.

Furthermore, the results of this investigation also showed a relevant “time x group” effect for the FEP/CA subgroup in terms of longitudinal improvement in *daily functioning*. This finding supports the beneficial effects of Pr-EP intervention in longitudinally promoting functional recovery also in young FEP individuals who were recruited though compulsory admission. Finally, our results showed no increased risk for service disengagement, new attempted suicide, and suicidal ideation in FEP/CA participants (Pelizza et al., 2022d; Poletti et al., 2024).

4.1. Limitations

A first limitation was related to discrepancies in mental health legislation among countries. Therefore, our results could not be generalizable or easily comparable with other international findings.

Second, information on compulsory admission was mainly collected from medical records. This data collection method may be prone to information bias, as some of data in the medical records may have been lost or not correctly registered.

Finally, our investigation was limited to a 2-year follow-up period. Our findings are therefore comparable exclusively with studies having longitudinally similar design. Future studies with longer follow-up duration are needed.

4.2. Conclusions

The first contact with mental health services of FEP patients is critical for subsequent care adherence. The results of this investigation showed that a relevant portion (one in 10) of our participants entered the Pr-EP program through compulsory admission. However, across the 2-year follow-up period, this did not appear to represent a predisposing factor for service disengagement and new compulsory admission. We also notably found a significant longitudinal improvement in daily functioning also in the FEP/CA subgroup, suggesting the beneficial effect of Pr-EP intervention in promoting functional recovery also in FEP patients recruited though compulsory admission.

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CRedit authorship contribution statement

Lorenzo Pelizza: Writing – review & editing, Writing – original draft, Methodology, Formal analysis, Data curation, Conceptualization. **Emanuela Leuci:** Writing – review & editing, Data curation, Conceptualization. **Emanuela Quattrone:** Writing – review & editing, Data curation. **Derna Palmisano:** Writing – review & editing, Data curation. **Giuseppina Paulillo:** Writing – review & editing. **Clara Pellegrini:** Writing – review & editing, Data curation. **Simona Pupo:** Writing – review & editing, Methodology. **Pietro Pellegrini:** Writing – review & editing. **Marco Menchetti:** Writing – review & editing.

Declaration of competing interest

The authors have nothing to declare.

Data availability statement

The data that support the findings of this research are available on reasonable request from the corresponding author. The data are not publicly available due to privacy and/or ethical restrictions.

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Supplementary materials

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