The capability approach for the overcoming of a Judicial Psychiatric Hospital in Italy: impact evaluation at eight years

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The capability approach for the overcoming of a Judicial Psychiatric Hospital in Italy: impact evaluation at ten years

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GG and LL defined the scope of the research. LL and LM developed the evaluation design, managed the interviews and analysed the results. With specific regard to the health assessment of beneficiaries GM and GC carried out the health assessment. LL, GG interpreted the results and wrote the discussion section. GG developed the program theory and LL contributed to its refinement. LL wrote the first draft of the paper; all authors contributed considerably to editing of all written work, provided feedback on various drafts, and read and approved the final manuscript.

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Introduction

Since 2011, Italy has begun the definitive closure of all the six maximum-security Judicial Psychiatric Hospitals (JPH) that provided treatment and custody for mentally ill offenders (Di Lorito et al., 2017; De Luca et al. 2018; Ferracuti et al. 2019; Fioritti & Melega, 2020) deemed not guilty because of insanity and socially dangerous, and for inmates who became mentally ill during incarceration. These custodial institutions confined mentally ill persons on indeterminate sentences and the quality of mental healthcare was seriously unsatisfactory, thus depriving them of all civil rights (Barbui & Saraceno, 2015). The definitive closure of the JPHs was confirmed by the Decree-law n.81/2014 and with the discharge of the last patients at the JPH of Barcellona Pozzo di Gotto, in February 2015, Italy officially became the first country worldwide to close forensic psychiatric hospitals. Some years later after the closure of Italian JPHs some critical issues arose relating to the development at a regional level of small-scale facilities and mental health services and possible treatment pathways in and out institutionalizing settings such as the residences for the execution of security measures (REMS) (Zanalda & Giannantonio, 2021). Few studies, however, provided outcome results for cohort of patients discharged from psychiatric hospitals by using a prospective longitudinal design (Barbato et al., 2004; Leff et al., 2000; McGrew et al., 1999; Rothbard, et al., 2004) and according to Barbui and Saraceno (2021) there is still a shortage of evidence about the effectiveness of various legal frameworks among EU Member States. Finally, there is a lack of data in JPH setting and no study used ICF to assess the effectiveness of the intervention with ex inmates or inmates inside a JPH (Manabe et al.,2011).

The pilot project Luce è Libertà (Light is Freedom from 2010 to 2014), was aimed at overcoming JPH of Barcelona Pozzo di Gotto (Messina, Sicily Region) where serious human rights violations were reported by a parliamentary commission[1]. The project was built in

partnership with the Mental Health Department of the Provincial Health Authority (ASP ME) of Messina, the ULEPE (Local Office for External Criminal Execution), the centre for social innovation Ecos-Med soc. coop. soc., and a network of social consortia in Sicily. It was co-financed by Cassa delle Ammende of the Ministry of Justice for a value of € 3,894,886 and by the local partners, for a total start-up amount of € 1,248,520. The project aimed at experimenting an evolved model of community welfare structurally intertwined with forms of productive green economy. The theoretical model underlying the pilot project is based on the human development paradigm and following the Capability Approach (CA) it is addressed to the capability expansion (Sen, 1989, 2001; Fukuda-Parr, 2003). The main goal was to simultaneously promote socio-economic systems generating alternatives on the main areas of the beneficiaries' human functioning and expanding their substantial freedoms. The theoretical framing The methodology of the project Luce è Libertà is centred on the idea of ensuring to each beneficiary a Personal Capability Capital (PCC), which represents the stock of resources on which to base paths to re-gain their civil rights on an individual, social and community level. The mutualization of PCCs has made it possible to set up a dedicated fund at the Community Foundation of Messina (CFM) aimed at self-financing Luce and Libertà over the long term (20 years after the start-up)[2].

The impact assessment of the pilot Project Luce è Libertà (Light is Freedom) was commissioned to CEVAS by the Community Foundation of Messina (also CFM) (Leone, 2014). The main hypothesis was that the activation of inclusive welfare models based on the protection of rights and the promotion of solidarity constraints, in micro-contexts characterized by a high level of social capital at the inter-organizational level, could trigger mechanisms for strengthening and expanding the opportunities and insofar to guarantee the increase of people substantial freedoms. The CA conceives well-being as the freedom people have to enjoy valuable activities and states. According to the CA, well-being should be

conceived directly in terms of functioning and capabilities, instead of resources or utility (Alkire, 2015), happiness, desire fulfilment or opulence.

Material and methods

To compare the process of capacitation over time among the beneficiaries the method of comparison between privileged capacities was used, which involves the comparison between certain particular capacities chosen as the centre of interest "without seeking completeness" (Sen, 2001:86). The research aimed at answering the following evaluation questions:

1. After the exit from the JPH, is there an improvement in the welfare conditions of the beneficiaries of the project? Are risk factors and the need for control measures reduced?

2. Does the 'parachute' mechanism work, i.e., the protection system given by the activation of formal and informal local support networks, in case the subjects experience phases of crisis? Is recidivism (re-entry to the penal area) reduced?

3. Is the model more or less efficient compared to the standard model based on hospitalisation in protected residential structures or therapeutic communities?

The pre-post study design collected data at three points: T0) baseline inside the JPH along the period May 2010 - November 2012; T1) at 20 months follow-up in the period 2012-2013; T2) a follow-up in December 2019. Ethical approval for the study was granted by a local ethics committee. All participants signed informed consent and voluntarily accepted to be involved in the project and to mutualize the economic personal dowry of the so-called PCC, for the purpose of a productive investment. In this way, thanks to the yield generated, the social benefits (e.g., labour insertion, the net of social support, and measures of social housing) have been extended for over 20 years. During the administration of the HoNOS

Secure (Wing et al., 1998) and ICF tests, data from 52 subjects were recorded: those of a new subsequent insertion without detection at T0 are missing.

The efficiency of the model was calculated by comparing the direct healthcare costs incurred for the beneficiaries of Luce è Libertà with the standard healthcare costs as follows. The people who died shortly after the start of the project wer excluded by the analysis.

The per capita and pro-die fees of social-health or residential healthcare facilities for psychiatric patients at the time of the survey vary between 130 - 200 euros.

Instruments to collect data

Data collection was mainly carried out through a structured questionnaire completed in the pre- and post-version by trained Mental Health Department ASP-ME5 health workers. It included 124 structured questions as follows: a section with personal information (13 questions: age, marital status, employment, education...); psychiatric history, legal data (9 questions:year of the crime, type of restriction, date, and duration of stay in the JPH, definitive/provisional safety measures and timing...); psycho-pathological data (17 questions: diagnosis, history, drugs and therapy, other concomitant pathologies); social conditions (11 questions: case manager references, presence of work placements, references to the JPH's background, type and frequency of contacts). Following, the HoNOS Secure scales and a selection of ICF items with 19 and 55 compulsory choice questions, respectively were administrated.

The Health of the Nation Outcome Scale for Users of Secure and Forensic Services HoNOS-secure (Vers 2b St Andrew) tool, called HoNOS Secure, consists of two scales. The first scale includes 7 items that refer to the risk for oneself, for others and from the others, to the level of protection and accompaniment necessary for compliance with the rules, and to clinical risk.

The summary index of HoNOS Secure related to the area of mental and physical health conditions and problems in daily life activities, included only 8 of the original 12 items (Items 1, 2, 4, 5, 6, 8, 9) excluding those with over 10% of non-responses at T0 during the detenction in the JPH. The score range is from 0 (risk absent) to 4.

The second part of the questionnaire was based on a selection of some items of the International Classification Functioning Disability and Health (ICF) developed by WHO (WHO 2011). The ICF items correspond to four dimensions, which reflect the areas of empowerment (capability dimensions) also used in the definition of the personalised intervention projects developed thorough the PCC. The ICF uses two constructs: (a) a person's ability to perform an activity in a standard environment; (b) a person's actual performance in performing an activity in his natural environment. Therefore, the performance qualifier (P) represents a measure of an individual's 'functioning', similarly to the meaning given by Amartya Sen's Theory of Social Justice. The qualifications/scores represent the limitation or restriction levels and allow to denote the seriousness of the problem (range 0-4)

A qualitative investigation was carried out through the realization of No. 20 unstructured interviews (No. 8 to ex inmates and No. 12 to project operators and managers). The objectives of the interviews were: 1) understanding the concrete ways of using the care budget, starting from the management of the numerous 'critical events' (e.g.: how to avoid and contain re-entry, buffer function with magistracy...); 2) identifying strategies adopted to expand the 'freedoms and offer more opportunities' (primarily housing and work); 3) analysing the sustanability of the solutions adopted by the project.

All the interviews were recorded, transcribed, and the contents were codified.

Statistical analysis

The statistical analysis followed two steps:

a) Construction of some synthetic indexes for HoNos Secure and the ICF sub-scales. The internal coherence of the scales was measured using the Cronbach Alpha coefficient and any reductions in the variables to be entered were decided;

b) Comparison between the average (t-test) of the pairs of items between the first and the second survey to highlight the areas in which the significant changes occurred;

There are 39 ICF items, called 'Qualifiers Performance' and 'Qualifier Capacity', that are discussed in this analysis (Tab.1). They have been summarized, with an additive procedure, by defining four sub-scales (Cronbach Alpha coef. from .76 to .94). related to the dimensions used in the personalised projects: Sociality Scale (composed of 8 items), Culture and Knowledge Application Scale (n.10 Items), Living and Daily Life Scale (n.16 items), Income and Work Scale (n.5 items). Each of the 4 scales, therefore, gives rise to four synthetic indicators: a pre- and post-performance measurement (T0 and T1), a pre- and post-capacity measurement. The scales were later standardized but in the present study the original values that reflect the statistics used to build the scales themselves are illustrated.

Table 1. Internal consistency of four ICF scales in the first survey (t0) and items included for Performance and Capacity Qualifiers

Scales	**Cronbach's Alpha**		**N° of Items**	**ICF Qualifiers/ items Included**
	P0	C0		
Sociality	0,76	0,84	8	*d740_Formal relationships; d750_Informal social relationships; d310_ Communicating with -- receiving -- spoken messages; d330_Speaking; d350_Conversation; d910_Community life; d920_Recreation and leisure; d950_ Political life and citizenship*
Culture and knowledge	0,91	0,93	10	*d810_Informal education;* ***d825***_*Vocational training;* ***d160***_*Focusing attention; d163_Thinking;* ***d166***_*Reading;* ***d170***_*Scrittura;* ***d172***_*Calcolating;* ***d177***_*Making decisions; d175_Solving problems;* ***d199***_ *Learning and applying knowledge, unspecified*
Daily life	0,9	0,92	16	***d650***_ *Caring for household objects; d510_Washing oneself; d520_ Caring for body*

	4			*parts (brushing teeth, shaving, grooming, etc.); d570_Looking after one's health; d550_Eating; d630_ Preparation of meals (cooking etc.); d530_ Toileting;* ***d210_****Undertaking a single task;* ***d230****.1_Managing daily routine; d640_Doing housework; d620_ Acquisition of goods and services (shopping, etc.); d660_Assisting others;* ***d155****_ Acquiring skills;* ***d240.1****_Handling stress; d450_Walking; d440_ Fine hand use (picking up, grasping)*
Income and work	0,88	0,9	5	***d610****_ Acquiring a place to live; d870Economic self-sufficiency;* ***d845****_ Acquiring, keeping and terminating a job; d850_Remunerative employment;* ***d865****_ Complex economic transactions*

Results

The sample of beneficiaries is made up of 55 male subjects with an average age of 45 years: 32% of young people between 24 and 39 years of age, 39% with an average age between 40-50 years and the remaining 29% of mature adults between 51 and 64 years old. The participation in the project was proposed to all inmates in the JPH who had the extension of the measure and, therefore, had experienced greater failures in previous attempts to discharge. The length of stay within the JPH varied, in the first survey (T0), between 2 and 25 years with only 12 people that remained less than two years. The main crimes committed were: personal injury (12), murder (10), attempted crime (8), theft or minor offenses such as attempted robbery, non-compliance with restrictive provisions. The legal position of 48% of inmates at T0 was security measures or sentence discount while othetr beneficiaries were definitively discharged (with final license).

The two Honos Secure scales (Tab. 2) indicate significant improvements (t Student paired differences Sig, 000) from T0 (Pre) to T1 (post discharge) ranging from -2.15 points for the (Risk assessment scale (b) reduction of social risk for others and for themselves, to -1.12 points for Health Scale (a) due to the reduction of mental problems and hyperactive behaviors.

Table 2. Differences at T0 and T1 on two HoNOS scale Secure Student's t-test index

			Paired Differences					t	df	Sig (*2 tailed)*
	Mean T0	Mean T1				95% C.I. of Diff.				
	Pre	Post	Mean Diff	Std. Dev	Std. Err Mean	Lower	Upper			
(a) Honos Health conditions Scale T0 - T1	9,00	7,88	-1,12	1,68	0,24	0,64	1,59	4,75	50	.000
(b) Honos Risk assessment Scale T0- T1	10,27	8,12	-2,15	1,97	0,27	1,60	2,70	7,87	51	.000

The most significant improvements concern the lower need for protection of residences (20 people out of 52), the lower personal need for protection and assistance (20 cases) and accompaniment during licensing or exiting (29 cases). A quarter of the sample also recorded an improvement concerning clinical risk and its management.

The behaviours on which the greatest changes are highlighted are related (Tab.3) to the activities of daily life (both basic activities as self-care, washing, dressing and using money, organizing free time, shopping), those related to living conditions such as housing and the availability of money to satisfy basic needs (Items 10, 11, 12).

Table 3. HoNOS Secure Health scale: Items and mean values at T0 and T1

Items	T0 Mean value	T1 Mean value
1. Overactive, aggressive, disruptive or agitated behaviour	1.00	0.90
2. Non-accidental self-injury	0.40	0.30
3. Problem drinking or drug taking	0.80	0.80
4. Cognitive problems	1.40	1.20
5. Physical illness or disability problems	0.80	0.80
6. Problems with hallucinations and delusions	1.20	1.00
7. Problems with depressed mood	1.10	0.90
8. Other mental and behavioural problems	1.10	1.10

9. Problems with relationships	2.00	1.70
10. Problems with activities of daily living	2.20	1.90
11. Problems with living conditions	2.20	1.80
12. Problems with occupations and activities	2.20	1.80

From 2011 to January 2020 there were 10 deaths (18.2% of the sample). Within the first two years 2 people died while they were in a high-intensity therapeutic community; 3 people died at their home 6-8 years after their discharge due to serious health problems. Among the contributing causes of death there are: continuous and uninterrupted intake, often with high doses, of antipsychotic drugs, the presence of non-communicable diseases and addictions.

Social functioning through the ICF sub-scales

We analyse now the social functioning of the subjects who leave the JPH. The ICF provides a method of recording the level of impairment or limitation of the person through the use of items (qualifiers) able to denote the seriousness of the problem. The limitation or restriction levels range from 0, no problem, to 4, complete or deep problem. Table 4 illustrates the results of the comparison between pre and post detections (T0 and T1). The average value of each scale is highlighted, relative to the performances (called P0-P1) and the capacities (C0-C1) and the decrease in the indicator value denotes a reduction in the problematic condition. For all the ICF sub-scales, a significant improvement was noted in the second survey after leaving the JPH (T1) with a more intense variation as regards performance, indicating a reduction in problematic conditions. The variation is statistically significant for all the areas (Sig. ,021/ Sig. ,000 t-tests), except for capacity related to the area of income and employment (-, 37 Liv Sig., 06) which improved modestly.

Table 4. Paired Samples t-Test Pre –Post differences of 4 ICF Scales Performance and Capacity

					95% Conf.Inter.Diff		Paired diff		
	Scales with comparison at T0 and T1	t	df	Sig. (2-tailed)	Lower	Upper	Mean	Std. Dev	Std. Error Mean
Pair 1	Sociality Area Scale P0 - P1	6,718	52	,000	1,91	3,53	-2,72	2,94	0,40
Pair 2	Sociality Area ScaleC0 - C1	5,916	29	,000	0,96	1,97	-1,47	1,36	0,25
Pair 3	Culture and Knowledge P0 - P1	4,045	52	,000	0,79	2,34	-1,57	2,82	0,39
Pair 4	Culture and Knowledge C0 - C1	4,166	48	,000	0,67	1,91	-1,29	2,16	0,31
Pair 5	Housing and daily life Scale P0-P1	6,981	51	,000	3,15	5,70	-4,42	4,57	0,63
Pair 6	Housing and daily life Scale C0-C1	2,40	44	,021	0,21	2,37	-1,29	3,60	0,54
Pair 7	Income and employment Scale P0 - P1	4,752	52	,000	1,14	2,82	-1,98	3,04	,417
Pair 8	Income and employment Scale C0 - C1	1,917	42	,062	-,020	,076	-,37	1,28	,194

The items of the ICF Sociality Area Scale on which improvements are most frequently highlighted are related to informal and formal relationships (49% of the subjects) (communication, community life, recreational aspects, and political life). However the closest relatives constitute minor facilitators even in the step of discharge from the JPO. On the performance regarding "Housing and daily life Scale" there is an improvement (Mean -4,42) in 24 cases out of 53.

Moreover, there was an improvement ofn the Scale Culture and Knowledge (14 people) due to the attendance at short training courses or workshops (e.g., photovoltaic system maintenance group). The cognitive skill that has the greatest benefits when exiting the JPO is problem-solving (26 people).

In particular on the items Paid employment more than half of the sample, 34 people, recorded improvements. Important progress was also found on economic self-sufficiency (22 people). Concerning housing, between T0 and T1, the following changes have been observed: 3 people live alone and as many in the family of origin; 2 live in a group-apartment without the permanent presence of socio-health workers; 10 people are in a low protection structure (housing community, family houses) and 12 in high protection structures.

In January 2013 (T1), the security measure was revoked for 9 beneficiaries; most part of the beneficiaries benefited from alternative measures to internment, and only 12.5%, had returned to the JPH following the violation of the provisions and revocation of the final license.

Between T0 and T2 42% of beneficiaries achieved a job placement and at T2, about one out of three are employed in social cooperatives within or outside the Sicily Region. In all cases with job placements, there was income support from the FdC and in 6 more cases a support for rental costs of the house.

In the last follow up of December 2019 (Tab.5), almost ten years after the start of the project, the need for residential structures with high control intensity (REMS) or a prison (1 case) has fallen from the initial 70%, ony 6.8% are in a Residence for the Execution of Security Measures (REMS in Italy) and 36,4% of the beneficiaries, excluding the people who have died, live in their home.

Table 5. Residential facilities and living conditions of the Project beneficiaries - December 2019

	Surviving beneficiaries		Deceased beneficiaries	
Place	N.	*%*	N.	*%*
Living at home	16	*36,4*	4	*36,4*
Living in a therapeutic community (TC)	17	*38,6*	6	*54,5*
Community housing or Group-apartment	8	*18,2*	1	*9,1*

Residences for the Execution of Security Measures (REMS)	3	*6,8*	0	*0*
Total	44	*100*	11	*100*

Efficiency analysis and costs estimation for residential healthcare

The beneficiaries of Luce è Libertà in the fourth year from the operational start up of the pilot project (46 Months from Decembre 2011-September 2015), remained outside the JPH for a mean value of 36 months, that is 79% of the time. In the first years regarding housing conditions, health and restrictive measures, there was a continuous turnover: 16 people, were completely in charge of Luce è Libertà (from 1 to 46 months Mean value 18), complexively 20% of the time the were at home, 44% of the time was spent in a therapeuttic community and the rest in low intensity lealthcare structures and at the end of 2015 there where 21 people that still needed intensive healthcare in a therapeutic community (TC). Considering the fees of three diferent residencial structures at low-moderate -high intensity of healthcare and protecion, after 4 years the total expenditure for residential health care services addressed to the Project beneficiaries was about 5,673,833 euro. In the analysis the positive socio-economic externalities determined by the project are not taken into account. This feagure corresponds to 16% of saving from the theoretical expenditure that would have been incurred if the same patients were followed only by TCs, exluding 6% of people that would have returned home and the amount of initial budget cofunded by Cassa delle Ammende. We considered that in Sicily the length of stay in residential facilities in 2018 was twice the national average (Starace & Baccari, 2020),

Discussion

Results demonstrate that improvements in mental health were statistically significant in the follow-up period (T1) after the discharge from the JPH even for patients with a long institutionalisation and serious mental illness.

The needing for high control structures (JPH or REMS) along the first two years from the discharge decreases from an initial baseline of 70% (T0) to 12% (T1), reaching 6.7% after in the second followup (T2). This shows that the so-called 'parachute' mechanism, the protection system activated by the project, was effective.

At the first follow up (T1) 11.4% of beneficiaries lived alone or with their family while at T2 the percentage increased reaching the value of 42%. Employment is a key factor in enhancing mental health and social inclusion of people with severe mental illness and is associated with fewer rehospitalisation episodes (Nieminen et al., 2012: 5). The percentage of integration in the workplace is very high and reached 42% of the sample in 8 years; excluding retired and 10 dead people, it still corresponds to 29% (T2).

A critical issue, unfortunately as expected, is the high mortality (18.2% of the sample) from the initial discharges from JPH, and the early death (average age at death 49). Most people are dead two years after the discharge. Literature confirms higher Standardized Mortality Ratios (SMR 2,47 for males) in psychiatric hospitals with a higher rate after discharge (D'Avanzo, Negri, La Vecchia, 2003).

In line with the Capability Approach (CA) (Sen 1989; 2001) the space on which we tried to express judgments about the effectiveness of personalized intervention was that of increasing the substantial freedoms of people that is a key aspect of the CA underrepresented in the assessment of individual's well-being (Karimi et al. 2016). One of the project peculiarity is the use of the device called Personal Capital of Capability (PCC), a personal dowry, that allowed and accompanied the discharge from the JPH and the long-term support of all the ex

inmates. From a technical point of view, PCCs are very innovative. The PCCs have not been transformed into a flow of services (e.g.: fees for therapeutic communities, resources directly expendable by people) as commonly happens, even within the personal health budget models for mental health (Glendinning et al., 2008; Webber et al., 2014; Alakeson et al., 2016), but represented a 'stock of resources' mutualized and capitalized for productive investments and aimed at supporting the long-term inclusive social economies managed within the social district (DSE), promoting further entrepreneurial initiatives for job insertion, or to guarantee forms of social housing.

In conclusion, the fourth year represents the break even point of this model and as from then on, the capital invested in the project has begun to generate economic returns that continue to support interventions on the various dimensions: housing, work and social issues.The reduction in healthcare costs is mostly due to a moderate use of residential facilities and to strengthening of care and social inclusion processes at community level.

One of the indirect positive impacts of the project mid-term evaluation concerned the elaboration of regional guideline (Regione Siciliana, 2014) for the implementation of a program aimed at sustain healthcare and social inclusion at community level of mental ill patients discharged from JPHs. Across the Region, the use of the Health Budget device to support personalised treatment projects and the use of the ICF Tool to assess personal and social functioning has been introduced.

The creation of PCCs could be guaranteed by social impact financial programs and, therefore, do not weight on public spending, thus making possible the transition from inefficient welfare models to much more effective and efficient community welfare models. For example, co-managing entities could establish, thanks to the partnership of social finance actors, the capital of ability and guarantee the management of customized projects for at least 10 years. The public institution could commit to finance a decreasing health budget.

The lack of measurement of change throw scientific methods, according Carta and colleagues (2020), in Italy represents a critical point which may compromise the develpment of knowledge coming from one of the world‘s most important experiences of humanitarian approach to mental health. For this reason a reduced version of four ICF sub-scales was built to assess the social and health performances and functioning related to the discharge from the JPO within an impact evaluation design and not just for diagnostic purposes and clinical practice (Egger et al., 2019). The full version of ICF covers 300 pages dealing with 1,413 items and according to Helander (2003), the Chief medical officer Rehabilitation Program of the WHO, is too complex and would have been impossible to use it for programme evaluation puroposes. As suggested by Bickenbach (2014), the Capability Approach has been combined with the ICF tool.

A recent monitoring report about the overcoming of Italian JPHs and the role of REMS (Residences for the Execution of Security Measures) (Pellegrini et al., 2020) shows that: a) the relationships with the Judiciary and the Mental Health Departments of the Local Health Authorities in the period 2015-2019 have worsened; b) the future of the REMS models should be investigated and that other housing solutions could flank or even replace them. Some measures for the conversion of structures and organizational models, with a clear distinction between security policies and health care or psychiatric rehabilitation funcions (Casacchia et al., 2015), are still needed.

The results of the pilot Project Luce è Libertà could partially suggest some viable solutions to meet these needs.

The main limitation of our study is the lack of a complete monitoring system, and therefore of microdata at national level, about the health care paths after the discarge of the ex-inmates from the six JPOs. This shortcoming flawed the comparispon among different models of intervention and their standard costs. A further weakness of the evaluation design is linked to

the lack of direct interviews to the beneficiaries five years after the discharge. Many difficulties should be overcome to enter in contact and re-interview people, in charge of several Mental health departments, within therapeutic communities spread in many provinces.

Conclusions

The Italian reform of psychiatric hospital, with the "pioneering" measures that led to the closure of JPHs, has been considered a revolutionary trait (Di Lorito et al., 2017) and a choice of 'civilization' by placing this strategy under the scrutiny of health professionals, policymakers of other countries worldwide, which are still founded, to various degrees, on a greater restrictive institutionalising approach.

This study provided an impact evaluation of an innovative model, developed by the project Light is Freedom, with a sample of psychiatric patients discharged from one out of six Italian JPHs with a very long history of mental illness and 'detention'. The study addressed the need to reduce the paucity of empirical research around the closure of JPSs within the reform of the Italian mental health care system (Carta et al. 2020; Di Lorito, 2017; Casacchia et al., 2015).

A positive indirect impact of the project has been the generation of financial resources used to sustain the development of socio-economic systems of the social economy network (Giunta et al. 2014) that continue, after 10 years, to function as facilitators for social and labour insertions of ex JPH inmates and mentallly ill people.

Disclosure of interest

The authors declare that they have no competing interest.

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References

Alakeson, V., Boardman, J., Boland, B.,Crimlisk, H., Harrison, C., Llife, S., Khan, M., O'Shea, R &, Patterson, J. (2016). Debating personal health budgets. *BJPsych Bulletin,* 40(1): 34-37.

Alkire, S. (2015). *Capability Approach and Well-being Measurement for Public Policy.* OPHI Working Paper 94, Oxford University. https://www.ophi.org.uk/wp-content/uploads/OPHIWP094.pdf

Barbato, A., D'Avanzo, B., Rocca, G., Amatulli, A., Lampugnani, D. (2004). A Study of Long-Stay Patients Resettled in the Community After Closure of a Psychiatric Hospital in Italy. *Psychiatric Services,* 55,1, 67-70.

Barbui, C., & Sraceno, B. (2015). Closing forensic psychiatric hospitals in Italy: a new revolution begins? *The British Journal of Psychiatry*, 206(6):445-446. DOI: https://doi.org/10.1192/bjp.bp.114.153817

Bickenbach, J. (2014). Reconciling the capability approach and the ICF. *Alter,* 8(1):10-23

Carta, M.G., Angermeyer, M.C., Holzinger, A. (2020). Mental health care in Italy: Basaglia's ashes in the wind of the crisis of the last decade. *International Journal of Social Psychiatry*, 66(4): 321-330.

Casacchia, M., Malavolta, M., Bianchini,V., Giusti, L., Di Michele, V., Giosuè, P., Ruggeri, M., Biondi, M., & Roncone, R. (2015). Closing forensic psychiatric hospitals in Italy: a new deal for mental health care? *Rivista di Psichiatria*, 50(5),199-209. doi: 10.1708/2040.22158.

D'Avanzo, B., Negri, E., & La Vecchia, C. (2003). Mortality in long-stay patients from psychiatric hospitals in Italy: results from the Qualyop Project. *Social Psychiatric Epidemiology,* 38, 385–389.

De Luca, V., Pompili, P.M., Paoletti, G., Bianchini, V., Franchi F., Lombardi, M., Lagrotteria, B., Iannini, C., Fedele, C., Pompili, E., & Nicolò, G.(2018). The reform of Italian forensic psychiatric hospitals and its impact on risk assessment and management. *International Journal of Risk Recovery*,1(3). doi.org/10.15173/ijrr.v1i3.3510

Di Lorito, C., Castelletti. L, Lega. I, Gualco. B., Scarpa, F., Völlm, B. (2017). The closing of forensic psychiatric hospitals in Italy: Determinants, current status and future perspectives. A scoping review. *International Journal of Law and Psychiatry*, 55, 54–63.

Ferracuti, S., Pucci, D., Trobia, F., Alessi, M.C., Rapinesi, C., Kotzalidis, G.D., Del Casale, A. (2019). Evolution of forensic psychiatry in Italy over the past 40 years (1978–2018). *International Journal of Law and Psychiatry*, 62, 45-49.

Fioritti, A., & Melega, V. (2000). Italian forensic psychiatry: A story to be written. *Epidemiology and Psychiatric Sciences,* 9, 219–226.

Fornari, U., & Ferracuti, S. (1995). Special judicial psychiatric hospitals in Italy and the shortcomings of the mental health law. *The Journal of Forensic Psychiatry*, 6:2, 381-392. doi: 10.1080/09585189508409903

Fukuda-Parr, S. (2003). The human development paradigm: operationalizing Sen's ideas on capabilities. *Feminist Economics*, 9(2-3), 301-317.

Karimi, M., Brazier, J., & Basarir, H. (2016). The Capability Approach: A Critical Review of Its Application in Health Economics. *International Society for Pharmaco economics and Outcomes Research (ISPOR),* 19(6), 795-799.

Giunta, G., Giunta, G., Leone, L., Marino, D., Motta, G., Righetti, A. and Marino, D., (2014). A Community Welfare Model Interdependent with Productive, Civil Economy Clusters: A New Approach. *Modern Economy,* 5(8). doi:10.4236/me.2014.58084

Glendinning, C., Challis, D., Fernandez, J., Jacobs, S., Jones, K., Knapp, M., Manthorpe, J., Moran, N., Netten, A., Stevens, M., & Wilberforce, M. (2008*). Evaluation of the Individual Budgets Pilot Programme: Final Report*. York: Social Policy Research Unit, University of York. https://www.york.ac.uk/inst/spru/pubs/pdf/IBSEN.pdf

Helander, E. (2003). A critical review of the International Clasification of Funcioning, disability and health (ICF). Presentation at a conference in Bucharest, Romania. Retrieved from http://www.einarhelander.com/critical-review-ICF.pdf.

Leff, J., Trieman, N., Knapp, M., & Hallam, A. (2000). The TAPS Project: a report on 13 years of research, 1985-1998. *Psychiatric Bulletin,* 24, 165-168.

Leone, L., (2014). Evoluzione ed effetti del capitale sociale del Distretto Sociale Evoluto di Messina. In: G. Giunta, L. Leone, D. Marino, F. Marsico, G. Motta, A. Righetti, *Sviluppo è coesione e libertà: il caso del Distretto Sociale Evoluto* (pp. 55- 69). Messina: HDECivil Economy. ISBN 978-92-9168-499-1

Manabe, S., Miura Y., Takemura T., Ashida, N., Nakagawa, R., Mineno, T., & Matsumura, Y. (2011). Development of ICF Code Selection Tools for Mental Health Care. *Methods of Information in Medicine,* 17; 50(2), 150-157.

McGrew, J.H., Wright, E.R., Pescosolido B.A., & McDonel, E.C. (1999). Patient outcomes following the closing of a state hospital. *Journal of Behavioral Health Services and Research*, 26, 246–261.

Nieminen, I., Ramon, S., Dawson, I., Flores, P., Leahy, E., Pedersen M.L and Kaunonen, M. (2012). Experiences of Social Inclusion and Employment of Mental Health Service Users in a European Union Project. *International Journal of Mental Health,* 41(4), 3-23.

Pellegrini, P., Paulillo,G., Pellegrini, C., Barone, R., Cecconi, S. (2020). *Primi risultati del questionario sulle Residenze per la Esecuzione delle Misure di Sicurezza (R.E.M.S.) al tempo del covid-19*. Osservatorio stop OPG.: http://www.sossanita.org/archives/10310

Regione Siciliana Assessorato alla Salute, Programma per la realizzazione di interventi e per il superamento degli OPG Direttiva Assessorile 127/2014.

Rothbard, A.B., Kuno, E., Hadley, T.R., & Dogin, J. (2004). Psychiatric service utilization and cost for persons with schizophrenia in a medicaid managed care program. *The Journal of Behavioral Health Services & Research,* 31, 1–12.

Sen, A. (2001). *Development as freedom.* (2nd ed.). Oxford New York: Oxford University Press

Sen, A. (1989). Development as Capability Expansion, *Journal of Development Planning,* 19, 41–58.

Senato della Repubblica Italiana (2011). Commissione Parlamentare di Inchiesta, Relazione sulle condizioni di vita e di cura all'interno degli ospedali psichiatrici giudiziari, Doc XXII bis n.4, 20.

Starace, F., & Baccari, F. (2020). La Salute Mentale nelle Regioni Disuguaglianze di sistema SIEP Società Italiana di Epidemiologia Psichiatrica, Quaderno n.7. http://siep.it/wp-content/uploads/2018/08/Scheda-Sicilia.pdf

Zanalda, E., & Giannantonio, M. (2021). Overcoming forensic psychiatric hospitals in Italy, five years later. *Journal of psychopathology,* 27:3-7. doi: 10.36148/2284-0249-413

Webber, M., Treacy, S., Carr, S. Clarke, M., & Parker, G. (2014). The effectiveness of personal budgets for people with mental health problems: a systematic review. *Journal of mental health*, 23(3), 146-155. DOI: 10.3109/0

9638237.2014.910642

Wing, J.K., Beevor, A.S., & Curtis, R.H. (1998). Health of the Nation Outcome Scales (HoNOS); research and development. *British Journal of Psychiatry*, 172, 11–18.

World Health Organization (2011) ICF International Classification of Functioning, Disability and Health. Geneva: World Health Organization. Retrieved from https://www.who.int/classifications/icf/en/. Accessed April 9, 2021

World Health Organization (2013). How to use the ICF. A Practical Manual for using the International Classification of Functioning, Disability and Health (ICF). Geneva: World Health Organization.

NOTES

1) In 2010, during the start-up of the project, 257 people were hospitalized in the JPH. They were all subjected to security measures and 110 of them, the 43%, were subjected to a provisional security measure, against a national average of 24.1%. Among the definitive inpatients, over 60% had an extended security measure and about half of these with over three extensions. The health conditions of the inpatients and the liveability of the rooms were declared very critical according to checks by the parliamentary commission of inquiry: "The rooms of the inspected departments (...) are in poor hygienic-sanitary and structural conditions (…). Everywhere there was a nauseating stench due to the presumed presence of urine (...) the overcrowding of the patients in small rooms up to 8 people is revealed, as well as the nonexistence of any educational or

recreational activity and the feeling of abandonment of which the patients themselves complained." (Senato della Repubblica Italiana, 2011:25).

2)CFM has invested the mutualized CPPs in the creation of a widespread photovoltaic park created, in the logic of mutual benefit, with the involvement of the local community. The energy production is donated to the owners of the buildings and/or of the land that houses the photovoltaic systems, while the energy account (the public incentive that rewards the production from renewable sources, according to the Italian legislation) is entirely transferred to CFM. This allows to finance, in the long run, the personalized projects of the beneficiaries of the project through the creation of health micro-budgets.Two medium to large-sized plants were constructed on buildings belonging to the Ministry of Justice, that therefore benefited free of charge from the energy production of these plants.