

Assessing mental health therapeutic communities functioning

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1. Introduction

This work is part of a research that aims at introducing empirical investigation methods for understanding and evaluating treatments in Mental Health. A commitment that is attributable to a more general clinical and social requirements: the ethical and scientific interest of the professional community of Mental Health for the promotion of effective care interventions as well as the entrepreneurization processes of the health sector which is designed to identify and consolidate proven effective care practices.

The aim of this paper is the evaluation of the functioning of residential therapeutic communities for severe patients (Angelini *et al.* 2017). Therapeutic communities are complex settings where numerous organizational and relational variables act (structures, activities, care characteristics, relationship between members, group dynamics). The empirical assessment of their functioning is a complex challenge, with clear implications for the promotion of effective interventions and for the improvement of the quality of care. The results of this study constitute a first step forward to understand, through a quantitative approach, a context which is complex both for the multiplicity of the involved stakeholders and the treatment variables to be analyzed.

2. Materials and methods

In order to analyse functioning, survey data have been collected. Two instruments have been used to gather the data: a self-report questionnaire at an individual level and an assessment table at the community one. The first, the VIVACOM Questionnaire (VIsiting for VALuation of COMmunities), (Biaggini *et al.* 2012) consists of 77 items, clustered in ten dimensions representing the major areas of communities functioning (general organisation, personalisation and rights, therapeutic climate and setting comfort, general treatment features: individual and group, family-focused activities, resident and caregiver safety, staff management and training, organisational supplements and collaboration, clinical documentation and reporting system, quality assessment and research). Respondents are asked to give a score y_{ij} on these set of items, with a scale bonded at both ends (1 to 5). For each dimension an index of functioning (FI_i $i=1,2,..10$) has been calculated as the average of the items score assigned by the respondent. A general Functioning Index (FI) has also been obtained to get a general score for each community.

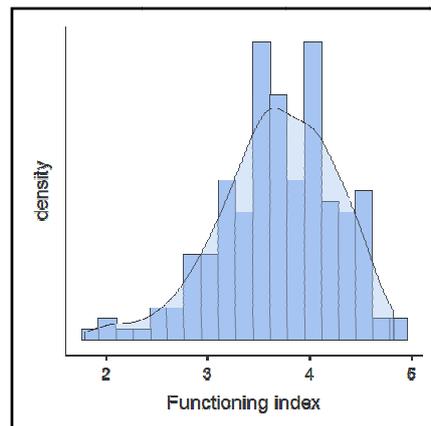
The assessment table, the GAS-SET (Grid for the Analysis of Set(ting)-Set) (Giannone and Lo Verso, 2011; Bruschetta, 2014) reports data on each community that mainly concern the range of services that aid and support the patient during the care program. The table is organized into different sections: structure data, collaborations, treatment data, intervention area, psychotropic drugs management, community regulation, activities area, staff member and patients data. Based on these information, several structural and organizational variables have been identified. In this study, variables have been aggregated to obtain dichotomous indicators, which assume value equal to 1 when the community offers a number of service equal or greater than the average, and 0 otherwise.

The sample under investigation includes 18 adult therapeutic communities, located in Italy,

and 191 units. All the participants have been involved in the Visiting DTC project, a national Italian - training, evaluation, research and accreditation of "Community Group-Quality" project, promoted by LegaCoop-sociale.

As shown in figure 1, FI has an asymmetric distribution ($M = 3.68$, $S = 0.570$). Although it provides a synthetic measure of functioning, a tendency to assess functioning with medium and high scores ($Q1 = 3.32$; $Q2 = 3.7$) has been observed. We think that this function could be considered as a *proxy* of the recognition, in staff members' perception, of a good work that has very often reached high levels of efficacy, so corresponding to the programmed targets.

Figure 1: FI Plot



The main descriptive statistics of the Functioning Index (FI) according to the levels of the factors with which it could be potentially associated, are reported in Table 1.

Table 1: Summary statistics of the Functioning Index by the levels of the potentially explanatory variables.

Variable	Categories	Functioning Index (FI)			
		N	Mean	Median	St.dev
Gender	F	129	3.72	3.73	0.561
	M	57	3.61	3.58	0.584
Age	≤30	19	3.76	3.71	0.559
	31-40	41	3.77	3.85	0.535
	41-50	45	3.70	3.73	0.525
	>=50	69	3.67	3.69	0.576
Professional Role	Expert	13	3.85	3.94	0.489
	Health	105	3.62	3.65	0.595
	Socio-Pedagogical	71	3.75	3.73	0.538
Collaborations	0	86	3.51	3.61	0.575
	1	105	3.82	3.82	0.530
Treatment data	0	64	3.51	3.53	0.657
	1	127	3.77	3.74	0.503
Intervention area	0	46	3.91	4.14	0.741
	1	145	3.61	3.63	0.486
Psychotropic drugs management	0	106	3.48	3.51	0.508
	1	85	3.94	4.06	0.543
Community regulation	0	73	3.50	3.53	0.546
	1	118	3.80	3.82	0.558
Activities area	0	56	3.65	3.67	0.555
	1	135	3.70	3.72	0.578

This first results reveal a high presence of women workers (69%) compared to men (31%). Nearly two out of three (65%) were more than 40 years of age while only 10% were younger than 30 years of age. Regarding their professional role, 60% of respondents carried out its role in

health, 30% in socio-pedagogical area, 10% were experts (psychologist, psychiatrist and pedagogist). The average values of FI conditioned to the levels of potentially explanatory variables (Col.4, Table 1) show that respondents working in communities whose number of activities is higher than the mean, award higher scores than the others, with the exception of intervention fields.

We are interested in the effects of the variables described in table 1 on FI. This presentation offers only the analysis of the general functioning index, as an example of the adopted method both for the sake of brevity and because data collection is still in progress. Due to the characteristics of Y, a beta regression model with random intercept, has been adapted and thus the dependent variable has been converted in a (0,1) interval (Verkuilen and Smithson, 2012). After estimating the null model without any explanatory variables, which highlights that the between-community variance is non-zero, a beta regression model, with a link logit and a random intercept was estimated.

3. Results

In order to consider the effects of the set of the considered independent variables on FI, the results relating to the estimated random intercept model are reported in Table 2. This model has been compared with the one including the fixed effects of all the independent variables above listed. The Chi-squared test used to evaluate the best fit of data does not show a significant difference between the two models, so only the estimates relating to the more parsimonious model have been reported.

Albeit subject to the limitations pointed out by the reduced sample size, which may explain a large part of overdispersion, these findings could make stakeholders reflect on some aspects of communities work. By analysing the estimates reported in Table 2, we observe that a positive effect on the dependent variable is higher when the indicators “Care data” and “Psychiatric drugs” take the ‘1’ value, compared to the reference level, that is they count a greater number of interventions than the average. This is more evident for the “Care data-Section” for which the estimated coefficient is three times larger than the size of “Psychiatric drugs” estimated coefficient. In the opposite direction “Intervention Area” and “Activities Area” move: a positive effect is obtained as the number of activities related to these dimensions is below the average. Similarly looking at professional roles: for both levels of this variable, the results show a negative effect compared to the reference category, which is composed by experts.

Table 2: Model results

Random effect	Variance	Std. Dev		
Community (Intercept)	0,04561	0,2136		
Conditional model:	Estimate	Std. Error	Z value	Signif. level
(Intercept)	1,8897	0,2157	8,761	***
Treatment data	1,3383	0,3049	4,389	***
Intervention area	-0,6169	0,1482	-4,161	***
Psycotropic drug management	0,3314	0,1234	2,686	**
Activities area	-1,2856	0,3146	-4,086	***
Health role	-0,5389	0,1438	-3,755	***
Socio-pedagogical Role	-0,5084	0,1455	-3,47	***
Overdispersion parameter for beta family (): 32.9				
Signif. codes: 0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1				

So, among the variables examined by the Gas-Set, the activities indicated in the “Care data” section are those that seem to have the greatest impact on a positive evaluation of the communities functioning. These activities are related to the work of construction, sharing and transparency of therapeutic planning for individual users and for the regulation of community life. Conversely, a

greater commitment in the "intervention area" and "activities area" sections shows worse assessments. These results are more difficult to interpret: do the operators believe that the commitment to more areas of intervention and activities does not allow to sufficiently focus on their work? Is this true also on the relationship with the user? Could the awareness of the complexity and commitment for an adequate care intervention reduce the evaluation of the quality of one's work? The issue will require greater reflection and in-depth study.

4. Conclusion

As we have seen, the final results of this work appears to provide useful knowledge and insights into the community functioning as well as the model seems to have the potential for wider replication, even if some challenges remain. Based on empirical data, we have observed that advices received from health care professionals are better, primarily, when the community commitment is focusing on the implementation of customized therapeutic residential projects, shared therapeutic interventions, as well as when a democratic construction of the general regulation is adopted. It is also important the psychiatric drugs management system: promoting the user self-management and the taking in charge directly by the community and the involved services. The relationship with several auxiliary activities needs to be addressed further. Finally, to sum up, the use of a quantitative approach allows to identify specific, recognizable and in some way measurable actions, implicated in the functioning of these contexts, trying to connect "what is actually done" (Guarnaccia et al. 2019), with the evaluation of people living the experience and this could have a direct operational usefulness for the community stakeholders. Equally, conditions concerning the statistical model performance draw our attention to the need for a large sample, in order to put forward practical proposal for the improvement of the involved organizations under a framework based on significant variables to the understanding of the community therapeutic treatments.

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