



The Geneva Model of Crisis Intervention: A Retrospective Study

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Abstract

Background: Brief therapy centers (BTCs) are outpatient mental health units based initially on a psychodynamic model of crisis intervention, and evolving later into a global care approach. The main objective of BTC is to provide mentally ill patients with a viable alternative to hospitalization.

Methods: We undertook a retrospective study of 323 patients admitted to a BTC in Geneva in order to understand the evolution of our patients care over the changes in psychiatry over the last 2 decades. To this end, we considered predictive factors of relapse for 160 individuals with repeated “revolving door” admissions compared to 163 patients with a single admission to the BTC. To analyze data, we mainly use analysis of variance and logistic regression with SPSS software.

Results: Living alone, lower socio-educational levels, unstable working conditions, crisis factor of professional trouble, and preexisting psychiatric conditions, such as depression, bipolar disorders, psychotic disorders or borderline personality disorder, that required multiple social and systemic interventions, and medical treatments (such as antipsychotics and mood stabilizers) increase probability that patients relapse and require multiple BTC admissions.

Conclusions: The results of the present study that are considered as preliminary, support the development of ambulatory mental health units that attempt to adapt their intervention practices to different populations in order to prevent the revolving door phenomenon and therefore contribute to improve the global system of mental health.

Keywords: Brief therapy center; Revolving door patients; Ambulatory units; Crisis interventions

Introduction

Brief Therapy Centers (BTCs) were created in Geneva in the early 1980s as an alternative model to the psychiatric asylums decried in the 1960s in western countries and to face the increased demand for psychiatric care. The initial purpose of these ambulatory short-term “crisis intervention units” was to provide an alternative to hospitalization for patients lacking preexisting psychiatric conditions but who required short intensive psychiatric and psychotherapeutic care because of a crisis situation. These units provided individual or family psychotherapeutic interventions, psychotherapeutic groups and social interventions for patients referred by general practitioners, psychiatrists or hospital and emergency units. For historical reasons, BTCs have mainly leaned themselves on a psychodynamic theory of crisis intervention, which considers that current interpersonal conflicts resonate with partly unconscious previous ones. From this perspective, crisis symptoms are considered as the expression of unconscious psychic conflicts reactivated by one or several life events [1]. These centers can provide unstable patients with 24-hour crisis interventions; they use a multidimensional approach based on individual and family psychotherapeutic interventions and can provide pharmacological treatments and structured social settings as well as temporary accommodation (1 to 7 nights). BTCs should be easy to access and were conceptualized to provide therapeutic services in less than 24 hours. The typical length of a crisis intervention program is 4 to 6 weeks and it does not include any home intervention. Recently, the structure of the Mental Health Department of the Geneva University Hospital has been transformed in response to an increasing demand for psychiatric consultations and hospitalizations [2]. The Geneva crisis system shared some similarities but had some differences with respect to other occidental health care delivery systems. In the United States, since 1971, the concept of mobile crisis outreach has been increasingly developing and has had a great influence upon the Anglo-Saxon

ambulatory model [3]. By 1990 most areas had developed different forms of mobile crisis services. However, the real impact of these mobile units upon state hospitalization rate and their cost-effectiveness remain controversial, mainly because of the lack of supporting collective data. This last point can possibly explain why after its wide development until 2000, mobile crisis intervention has begun to slowly wane [4]. This crisis intervention model differs considerably from the current Swiss or English model, and suffers from a lack of consistent evidence about its efficiency, as mentioned above [5]. A third model could be mentioned, since the federal government has increasingly supported from 2002 the development of mental health care, crisis services and substance abuse treatments in community health centers, especially in medically underserved areas. In Europe, the Anglo-Saxon ambulatory care model shares some commonalities with BTCs, which include care units such as a Crisis Resolution Team (CRT) or mobile crisis units and Community Health Centers. Indeed, drawing particularly on the American experience of mobile crisis units, since the 2000s, British health authorities have developed crisis resolution teams that have been proven to prevent hospitalizations and to reduce costs [6-9]. Crisis resolution units are mobile, multidisciplinary teams that can be requested at any time, offering home crisis interventions that can potentially result in several psychiatric interventions per day.

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By combining their actions with those of Community Health Centers (CHC) or with “Crisis Houses” where patients can spend a few hours or whole night, the CRTs have grown exponentially in the last decade to 343 units in 2006-2007 in England [10].

In Geneva, the importance of BTC has been increasing in recent years [11]. In fact, they have attained a key position in the mental health care system as screening centers by allowing greater flexibility in the admission of patients with more severe psychiatric diagnoses. Ultimately, BTCs have led to a significant decrease in psychiatric hospital admissions, which have dropped at least 27.7% according to reports of Geneva hospital activity between 2001 and 2005 [12]. Thus, the crisis units have become a consistent alternative to hospital admission in severe mental health crises [13].

Despite these successes, little is known about the profile of patients who relapse and require multiple BTC admissions despite a well-conducted crisis intervention. A better understanding of this patient group will be informative in several ways. First, such evidence may further advance the development of intensive treatment in ambulatory units, which could improve their ability to answer the needs of patients who are repeatedly admitted to BTCs in a “revolving door” manner. We hypothesize that the impact of crisis interventions may be different for these patients in comparison with single admission patients because of differences in the type and severity of illnesses. The adequacy of the initial theoretical model of crisis interventions when confronted with the continuing transformation and increasing heterogeneity of the psychiatric population treated in our crises units remains an underlying question in Geneva. In an attempt to provide some answers to these difficult questions, we carried out a retrospective and an exploratory study in the BTC operating in the Servette catchment area in order to collect the socio demographic characteristics, clinical diagnostic and management challenges of single admission patients compared with “revolving door” admission patients.

Method

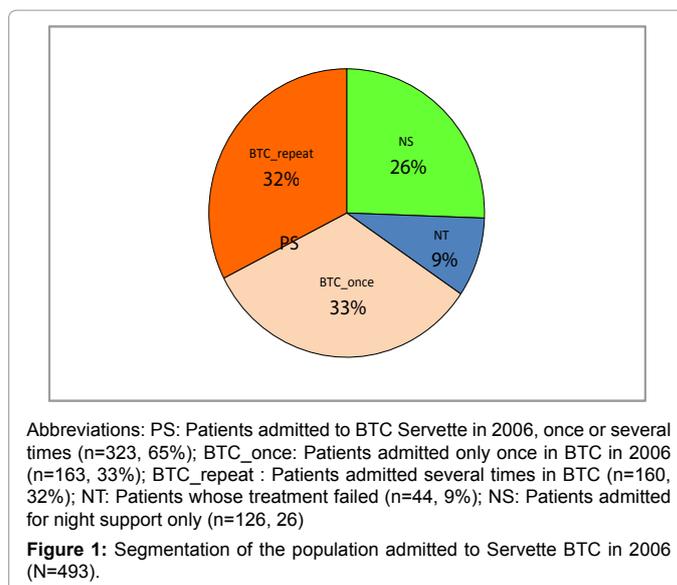
Study design

We carried out a retrospective study at the Brief Therapy Center of a mental health catchment area during the year 2006 after approval by the head of the Division of General Psychiatry. We considered all patients admitted during this year, 449 patients who had completed treatment from a total of 493 patients admitted to the BTC. We excluded 44 patients whose were initially admitted but refused any form of support (Figure 1).

Among these 449 patients, only 323 were admitted to the crisis intervention program, while 126 patients received only nurse support without medical intervention and spent one or more nights in the center (Figure 1). In this work, we have limited our analysis to the group of patients who were admitted to the complete crisis intervention program. Patients who benefited only from nurse support and/or nights in the center are described in a previously published article [14]. In this study, we compared the socio-demographic, clinical and diagnostic characteristics of patient admitted only once to BTC for crisis intervention with patients who relapsed and required repeated “revolving door” admissions 3 years before or after 2006 (according to the availability of computer-data).

Statistical analysis

Samples (multiple vs. single admission) were compared with the chi-square test for categorical variables (non-parametrical analyses



have been made and were significant (except for “gender” variable, which results were not significant), the Wilcoxon sign test for non-normal variables and ANOVA analyses for continuous variables. Factors possibly associated with readmission were investigated with univariate logistic regression models. Unadjusted odds ratios (OR) and 95% confidence intervals (95% CI) were estimated. Statistics were computed using SPSS version 20 (IBM Corporation, Armonk, NY, USA). All tests were two-tailed, with significance level at 0.05.

Results

Among the 323 patients who were admitted to the crisis intervention program, 163 patients were admitted a single time, while the remaining 160 were admitted at least twice. We did not find differences in age or sex ratio between these 2 groups or differences in the number of days of treatment (Table 1). All patients who were admitted to crisis intervention programs waited the same time before treatment and had the same duration of care in BTC. However, we did identify significant differences in their marital status: 55.8% of single admission patients were married compared to 43.8% of revolving door patients; respectively 12.9% vs. 25.6% were divorced.

Compared to patients who relapsed, single admission patients had a higher socio-educational level (20.2% vs. 10.6%), more stable working conditions (44.8% vs. 30.6% had a job), and were less often evaluated as disabled (3.1% vs. 19.4% benefited from disability insurance).

The revolving door group of patients had significantly more preexisting psychiatric conditions than single admission patients (83.8% vs. 67.5%). However, only 5.9% of the whole population had been hospitalized during or after BTC treatment care, with no difference between the two groups (Table 1).

Furthermore, revolving door patients were more frequently treated by psychiatrists before BTC treatment care than single admission patients (60.6% vs. 41.1%) and they more frequently attended specialized programs (5.6% vs. 1.2%), while single admission patients were more often treated by general practitioners (31.3% vs. 17.5%) or had no previous follow-up (26.4% vs. 16.3%). Single admission patients were more often referred from emergency rooms (46.6% vs. 32.5%) but less often by general practitioners (4.9% vs. 11.3%) than patients with multiple admissions (Table 1).

Depression was the most frequent diagnosis (72.4%) in BTC; bipolar disorders, personality disorders and psychotic disorders were less represented (respectively 14.2%, 17.0% and 6.5%). Revolving door patients treated in the crisis intervention program in 2006 more frequently suffered from bipolar disorders and borderline personality

disorders than single admission patients (respectively 19.4% vs. 9.2% and 24.4% vs. 9.8%). Diagnoses of anxiety disorders, depression, psychotic disorders, adaptation disorders or addictions were comparable in both populations (Table 1).

		Total (N=323)	BTC repeat (n=160)	BTC once (n=163)	ANOVA		
					F (1,321)	p	η ²
Age (mean ± sd)		39.3 (11.1)	40.3 (10.7)	38.4 (11.5)	2.30		0.007
BTC (nb of days)		31.3 (19.4)	30.0 (19.3)	32.5 (19.5)	1.32		0.004
Gender (%)							
	Male	131 (40.6)	64 (40.0)	67 (41.1)	0.041		0.000
	Female	192 (59.4)	96 (60.0)	96 (58.9)	0.041		0.000
Marital status (%)							
	Single	91 (28.2)	44 (27.5)	47 (28.8)	0.071		
	Married	161 (49.8)	70 (43.8)	91 (55.8)	4.75	**	0.015
	Widowed	9 (2.8)	5 (3.1)	4 (2.5)	0.13		
	Divorced	62 (29.2)	41 (25.6)	21 (12.9)	8.63	**	0.026
Education (%)							
	Primary	189 (58.5)	98 (61.3)	91 (55.8)	0.98		0.003
	College	60 (18.6)	22 (13.8)	38 (23.3)	4.93	**	0.015
	Superior	50 (15.5)	17 (10.6)	33 (20.2)	5.78	**	0.018
	None	24 (7.4)	23 (14.4)	1 (0.6)	23.73	***	0.069
Activity (%)							
	Employed	122 (37.8)	49 (30.6)	73 (44.8)	7.0	**	0.021
	Unemployed	57 (17.6)	23 (14.4)	34 (20.9)	2.34		0.007
	Dis. Insurance	36 (11.1)	31(19.4)	5 (3.1)	23.10	***	0.067
	Soc. Institution	50 (15.5)	25 (15.6)	25 (15.3)	0.005		0.000
	Student	12 (3.7)	8 (2.5)	4 (4.9)	1.31		0.004
	None	46 (14.2)	18 (17.5)	28 (11.0)	2.76	*	0.009
Origin (%)							
	Emergency	128 (39.6)	52 (32.5)	76 (46.6)	6.84	**	0.021
	Consultation	28 (8.7)	13 (8.1)	15 (9.2)	0.12		0.000
	MD	26 (8.0)	18 (11.3)	8 (4.9)	4.42	**	0.014
	Hospital	77 (23.8)	39 (24.4)	38 (23.3)	0.05		0.000
	Spontaneous	1 (0.3)	1 (0.6)	0 (0.0)	1.02		0.003
	Psychiatrist	63 (14.2)	37 (23.1)	26 (16.0)	2.65		0.008
Psy Atcd (%)		244 (75.5)	134 (83.8)	110 (67.5)	11.92	**	0.036
Delay <24 h (%)		103 (32.0)	58 (28.1)	45 (35.6)	2.07		0.006
Diagnosis (%)							
	Depression	234 (72.4)	111 (69.4)	123 (75.5)	1.50		0.005
	Bipolar ds	46 (14.2)	31 (19.4)	15 (9.2)	6.95	**	0.21
	Psychotic ds	21 (6.5)	13 (8.1)	8 (4.9)	1.38		0.004
	Personality ds	55 (17.0)	39 (24.4)	16 (9.8)	12.51	***	0.038
	Adaption ds	23 (7.1)	10 (6.3)	13 (8.0)	0.36		0.001
	Anxiety ds	58 (18.0)	31 (19.4)	27 (16.6)	0.431		0.001
	Addictions	52 (16.1)	30 (18.8)	21 (13.5)	1.21		0.004
Destination (%)							
	Psychiatrist	148 (45.8)	62(38.8)	86 (52.8)	6.47	**	0.02
	GP	28 (8.7)	16(10.0)	12 (7.4)	0.71		0.002
	Consultation	73 (22.6)	47 (29.4)	26 (16.0)	8.49	**	0.026
	Hospital	19 (5.9)	12 (7.5)	7 (4.3)	1.50		0.005
	Specialized prg	24 (7.4)	12 (7.5)	12 (7.4)	0.002		0.000
	None	31(9.6)	11 (6.9)	20 (12.3)	2.72		0.008
Previous Follow up (%)							
	Psychiatrist	164 (50.8)	97 (60.6)	67 (41.1)	12.72	***	0.038
	GP	79 (24.5)	28 (17.5)	51(31.3)	8.48	**	0.026
	Specialized prg	11 (3.4)	9 (5.6)	2 (1.2)	4.79	**	0.015
	None	69 (21.4)	26 (16.3)	43 (26.4)	4.98	**	0.015

*p<0.10; **p<0.05; ***p<0.001; nb of days: number of days in care; Dis. Insurance: Disability Insurance; Psy Atcd: psychiatric antecedent before 2006; Delay <24 h: delay before entering BTC inferior of 24 hours; ds: disorders; GP: General practitioner; Previous Follow up: type of follow-up before treatment at the BTC

Table 1: Characteristics of patients with single and multiple BTC admissions.

Univariate logistic regression models (Table 2) showed that age, gender and delay before entering BTC were not associated with BTC readmission. Divorced patients more likely belonged to the revolving door group than single patients (OR=2.09, 95% CI [1.07, 4.07]). Patients with a higher education level were less likely to belong to the multiple admission group than patients who attended primary school only (college: OR=0.54, 95% CI [0.30, 0.98]; superior: OR=0.48, 95% CI [0.25, 0.92]). Patients who didn't go to school were more likely to belong to the revolving door group than patients who attended primary school (OR=21.36, 95% CI [2.83, 161.38]). Having psychiatric antecedent showed higher probability to be a patient who relapsed than people who didn't present that (OR = 2.48, 95% CI [1.46, 4.23]; Table 2). Patients with crisis reason about professional problematic

had higher probability to belong to revolving door group than patients who didn't have this theme of crisis (OR=.48, 95% CI [.26, .88]; (Table 2). The diagnosis of depression, bipolar disorder, psychotic disorder and personality disorders can be considered as the diagnosis more frequently predict a return in CBT (respectively: OR=3.02; OR=7.99; OR=4.85; OR=3.48; (Table 2). However, there is no difference between the two groups for diagnosis of depression and psychotic disorder. When considering differences in treatment and setting in the BTC (group and individual therapies, pharmacological treatment or family interventions), social and systemic intervention, and, antipsychotic and mood stabilizers treatments were predictive factors of BTC readmission (respectively: OR=2.34, 95% CI [1.32, 4.17]; OR=1.75, 95% CI [1.02, 3.03]; OR=1.79, 95% CI [1.10, 2.91]; OR=2.29, 95% CI [1.08, 4.85];

		b (SD)	Wald	Df	p	Odds Ratio	95%CI
Age		0.02 (0.01)	2.28	1		1.02	1.0 to 1.04
Gender (baseline: "Men")		0.05 (0.23)	0.04	1		1.0	0.60 to 1.50
Marital Status			9.09	3	**		
	Single					1	
	Married	-0.20 (0.26)	0.56	1		0.82	0.49 to 1.38
	Widowed	0.29 (0.70)	0.17	1		1.34	0.34 to 5.30
	Divorced	0.74 (0.34)	4.66	1	**	2.09	1.07 to 4.07
Education			17.78	3	***		
	Primary					1	
	Secondary	-0.62 (0.31)	4.14	1	**	0.538	0.30 to 0.98
	Superior	-0.74 (0.33)	4.93	1	**	0.478	0.25 to 0.92
	None	3.06 (1.03)	8.80	1	**	21.357	2.83 to 161.38
CBT Duration		-0.01 (0.01)	1.31	1		0.99	0.98 to 1.0
Psy Atcd		0.91 (0.27)	11.20	1	**	2.48	1.46 to 4.23
Delay <24 h		0.35 (0.24)	2.06	1		1.41	0.88 to 2.26
Diagnosis							
	Depression	1.12 (.50)	5.10	1	**	3.07	1.16 to 8.14
	Bipolar ds	2.09 (.60)	12.36	1	***	8.08	2.52 to 25.90
	Psychotic ds	1.58 (.62)	6.48	1	**	4.87	1.44 to 16.45
	Personality ds	1.24 (.33)	13.85	1	***	3.46	1.80 to 6.64
	Adaptation ds	0.37 (0.55)	0.45	1		1.45	0.49 to 4.27
	Anxiety ds	0.57 (0.32)	3.20	1	*	1.77	0.95 to 3.30
	Addictions	0.54 (0.31)	2.75	1	*	1.71	0.91 to 3.22
BTC Treatment							
	ADP	0.32 (0.28)	1.272	1		1.37	0.79 to 2.37
	APA	0.58 (0.25)	5.434	1	**	1.79	1.10 to 2.91
	Anxiolytics	0.46 (0.25)	3.416	1	*	1.58	0.97 to 2.56
	Mood stabilizers	0.83 (0.38)	4.686	1	**	2.29	1.08 to 4.85
	Systemic set	0.56 (0.28)	4.048	1	**	1.75	1.02 to 3.03
	Groups	-0.26 (0.25)	1.025	1		0.77	0.47 to 1.27
	Social set	0.85 (0.29)	8.438	1	**	2.34	1.32 to 4.17
	None	-0.19 (0.88)	0.048	1		0.83	0.15 to 4.60
Crisis Reasons							
	Familial	-0.11 (0.27)	0.153	1		0.90	0.53 to 1.54
	Professional	-0.74 (0.31)	5.626	1	**	0.48	0.26 to 0.88
	Mourning	0.29 (0.61)	0.216	1		1.33	0.40 to 4.43
	Violence	1.93 (1.09)	3.129	1	*	6.88	0.81 to 58.29
	Social	0.26 (0.30)	0.752	1		1.30	0.72 to 2.36
	None	0.69 (0.75)	0.842	1		1.99	0.46 to 8.70
	Health	0.49 (0.41)	1.376	1		1.62	0.72 to 3.65
	No compliance	0.56 (0.59)	0.898	1		1.75	0.55 to 5.57

* p<0.10; ** p<0.05; *** p<0.001; Psy Atcd: psychiatric antecedent before 2006; Delay<24 h: delay before entering BTC inferior of 24 hours; ds: disorders; ADP: Antidepressant; APA: Antipsychotic drug

Table 2: Logistic regression model for predictors of BTC return concerning 323 patients.

Table 2). Results had highlighted covariance between “BTC duration”, “education”, “disorders” (except personality and adaptation disorders) and “BTC treatments” (except mood stabilizers) variables.

Finally, we found that the number of hospitalizations was significantly reduced following crisis intervention at the BTC for all patients, 3 years before and after 2006, when compared to the period before BTC; as well the duration of hospitalizations was significantly less important for simple admission patients (Table 3).

Discussion

Here, we report the results of a retrospective study carried out during 2006 to better understand differences in the profiles of patients who were admitted once or multiple times to a crisis intervention program. Our purpose was to refine the prognostic factors of relapse and readmission after a crisis intervention episode.

First, it is important to note that we found few studies in the literature concerning mental health care management systems similar to BTCs in Geneva. Therefore, we are only partially able to compare our results with those of other equivalent centres in other countries. However, the Anglo-Saxon ambulatory care model (e.g. Crisis resolution team) shares some commonalities with BTCs. Indeed, the crisis resolution teams that have been proven to prevent hospitalizations and to reduce costs [6-8,15-17].

One of the main results of this study concerning the predictive factors of readmission, are that the “revolving door” population overall has an altered socio-professional profile in terms of marital status, education, employment and crisis factor as a professional trouble.

This population is made up of more people with disabilities and has more preexisting psychiatric conditions (more often previously treated by psychiatrist) than the single admission patients. Moreover more patient suffering from bipolar and personality disorders return to BTC than the single admission patients.

Revolving door patients seem to have quite distinct social and psychiatric characteristics from the single admission population, and we can reasonably suppose that they would have different needs in term of psychiatric and psychotherapeutic interventions. Indeed social insecurity seems to play a major role in this population, and we speculate as to whether the global program previously proposed (4-6 weeks treatment, no home intervention) is appropriate for the specific challenges of this population. This result requires further investigations because it is possible that patients who refrain from group therapies suffer from more severe illnesses, which could include psychotic or severe personality disorders, and are unable to participate in specific group therapy. Another explanation could be that by not participating patients do benefit from its positive therapeutical effects and have therefore are more likely to be readmitted. This result was also obtained in the study of McCrone et al. [17]. Furthermore, these authors have

determined a «Quality Of Life» evaluation indicating that CRT resulted in better patient satisfaction but had no significant impact on the quality of life or staff ratings of the patient’s mental health state.

Crisis Resolution Teams (CRTs) provide a community alternative to psychiatric hospital admission for patients presenting in crisis [13]. Moreover, in England, CRT has proven to be a cost-effective way to modestly reduce the expenses associated with in-patient stays [17].

Historically, BTCs have leant on a psychodynamic conception of psychic disorders and have initially focused on patients that could in the context of a crisis avoid a hospitalization, not on patients that have already been hospitalized. That’s why we found in our study much more patients suffering from depressive disorders (72.4%) and much less patients suffering from psychotic disorders than in Johnson’s study [8]. This result is comparable to the results of Bacchetta et al. [12], who reported a rate of 86.6% patients suffering from depression in a study concerning a sample of patients who received short-term intensive therapy in the BTC of another district in Geneva during the same period. We observed that only 6.5% of patients who were treated in our BTC suffered from psychotic disorders, while they accounted for 33% to 41% in the studies of Johnson et al. [7,8]. Bipolar disorders and borderline personality were overall less represented than depression but were significantly more frequent in the revolving door admission group than in the single admission group. Moreover, borderline personality disorders were more frequently reported in our study (17%) compared to Johnson et al., (8%) and Bacchetta et al. [8,12] (6%). This outcome could explain the expanding use of BTCs.

In light of these results, we suggest that BTCs require further development to extend their therapeutic activities to more severely ill patients as psychotic ones and to have a major impact upon hospitalization rates, which remain high in Geneva. Until now, BTC crisis programs have focused their activities on patients with mood disorders, anxiety disorders or light personality disorders, while patients with more severe disorders and persistently ill patients who require long-term and more intensive care were referred to hospitals.

Further wise, we note that patients with a single intervention are more likely to have been referred by an emergency room, while, no difference between the origination of the two groups from consultation or hospital units was found. These findings confirm the results of previous Swiss study of Bacchetta et al. [12].

Other findings reflect the reality of the evolution of the psychiatric population in Geneva. Indeed, 75.5% of patients admitted in 2006 had previous psychiatric history (not especially in BTC). Patients with several BTC admissions had significantly more preexisting psychiatric events than patients with a single intervention. Moreover, the present study indicates that the average time to the completion of treatment was less than 24 hours for only 32% of patients, with no difference between the two groups, and only 22.3% of those patients cared for

	Before BTC		After BTC		Wilcoxon sign test	
	Duration of hospitalization	Number of hospitalizations	Duration of hospitalization	Number of hospitalizations	Z	p
BTC repeat (n=160)	6.50 (0-536)	1.00 (0-36)	0.05 (0-361)	0.00 (0-31)	-1.08	
BTC once (n=163)	0.00 (0-883)	0.00 (0-13)	0.00 (0-246)	0.00 (0-25)	-3.69	***
					-2.08	**
					-3.78	***

* p<.10; ** p<.05; *** p<.001

Note: The duration of hospitalization is the number of days spent at hospital; Values are given as median (range); Wilcoxon analysis tests the difference between “after BTC” values and “before BTC” values: so if Z is negative and significant, “before BTC” values are higher than “after BTC”

Table 3: Comparison of duration and number of hospitalization 3 years before and after BTC.

within 24 hours showed no psychiatric history at the time of initial evaluation. This observation should be taken into account because of the increasing psychiatric density in Geneva during the last decade. It appears that considerable numbers of primary psychiatric assessments are provided by private psychiatrists and other emergency psychiatric units. This outcome supports the previous results of Robin et al. [18], who reported that the prevention of hospitalization must be based as much as possible on rapid access to ambulatory care system at the time of crisis. However, we note that time before treatment was not a predictive factor for readmission for the population treated during 2006. Further prospective studies are required to determine the effect of time before treatment on crisis intervention in terms of therapeutical efficiency and whether this time is the same for all mental disorders treated.

Concerning hospitalizations, Lichtenberg et al. [16] reported that non-intensive care management does not lead to a reduction in hospital use. Moreover, in the present study, we found that only 5.9% of the entire population from the BTC had been hospitalized, with no difference between the two groups of patients. We have also observed that the number of hospitalizations was less important following a crisis intervention at a BTC for the 2 groups of patients and duration of hospitalizations was shorter following a crisis intervention for single admission patients. These results confirm the outcomes of two prior studies carried out in England, including a naturalistic study and a randomized controlled trial. These two studies evaluated the therapeutic benefits of CRT and showed a significant reduction in hospital admissions at 8 weeks and 6 weeks, respectively, for those provided with access to a CRT [7-8]. Otherwise, in Geneva, Bacchetta et al. [12] reported that the decrease in the number of psychiatric hospitalizations from 2001 to 2005 could consistently be assigned to an overall increase in BTC therapeutic activities (27.7% of hospitalizations for an increase of 234.9% in BTC activity). However, the discrepancy between these two numbers raises the question of a service primarily focused on patients who are rarely hospitalized. We can reasonably speculate whether the concentration of resources on patients who are more frequent consumers of hospital care could have a larger impact on the current psychiatric hospitalization rate in Geneva.

This study is limited by its retrospective design; additionally, we lacked clinical data, such as psychotic exacerbation, suicidal tendencies, attachment, and social function, as well as a validated measurement scales for clinical case management and therapeutic groups. Despite these deficiencies, all other data were obtained for all patients. The retrospective design and the effect size of some of our results (small to medium) giving us to consider our findings to be preliminary, particularly with regard to the comparison of hospitalization rates because of the differences in hospitalizations before and after 2006. To highlight the role of our ambulatory unit, we lacked a control group of patients in other services.

This study is a preliminary attempt to understand the predictive factors of readmission in a crisis centre in a delimited period and the results should be carefully considered for this period of time without prospective evolution and without data representing severity of the disorders. Also, we are unable to draw conclusions about the reasons that severely ill patients require crisis management (lack of data to distinguish more precisely between the natural course of the disease and the impact of the care provided).

Conclusion

Our results indicate that the main factors contributing to revolving

door admission are social disability, preexisting psychiatric antecedents and severe psychiatric conditions (diagnostics and treatment).

Even if there were many more patients suffering from affective disorders in our population than the ones suffering from psychotic or personality disorders, we are convinced that the expanding evolution and use of ambulatory mental health units (with constant readjustment) will respond more closely to the specific needs of severely ill patients. This will lead to avoid the relapse and hospitalizations and to an effective contribution to the global mental health care system.

Finally, our findings must be considered to be preliminary results and require confirmation by prospective and controlled studies.

Authors' Contributions

Conceived and designed the experiments: OS, JB, RBW, PRB

Performed the experiments: RBW, JB, OS

Analyzed the data: CM, OS, RBW

Wrote the paper: OS

All authors had full editorial control during the writing of the manuscript and finally approved it.

Authors declare any competing interest according to this study.

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