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ORIGINAL ARTICLE

The compliance to prescribed drug treatment and referral in a psychiatric emergency service: a follow-up study

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Abstract
Objectives: To evaluate the compliance to the prescribed drug treatment and referral of patients discharged from a psychiatric emergency service (PES). *Method:* From a total of 330 patients enrolled in the study, 175 (53%) agreed to a telephone inquiry 60 days after the PES visit regarding the status of the prescribed medication use and the outpatient referral. *Results:* 227 patients (68.8%) received prescription for a psychotropic medication and all patients were referred to an outpatient psychiatry service. Of the 175 patients who agreed to participate, 153 (87.4%) were successfully contacted by phone. Out of these, 97 patients (63.4%) were using the prescribed medication and 83 (54.2%) had scheduled a community appointment after 60 days. Patients who received a prescription had a greater chance of being on psychotropic medications at follow-up (OR 2.88; IC 95% 1.33-6.22; p = 0.007). However, the prescription was not associated with being in regular outpatient treatment (OR 0.76; IC 95% 0.036-1.61; p = 0.475). *Conclusions:* Psychotropic medications were routinely prescribed for PES patients, but this practice did not increase compliance to outpatient treatment referral after two months.

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DESCRITORES:
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Aderência.

Adesão ao tratamento farmacológico e ao encaminhamento ambulatorial em um serviço psiquiátrico de emergência: um estudo de seguimento

Resumo
Objetivos: Avaliar a adesão ao tratamento farmacológico prescrito e ao encaminhamento em pacientes atendidos em um Serviço de Emergências Psiquiátricas (SEP). *Método:* Foram coletados dados demográficos e clínicos de 330 pacientes atendidos em um SEP durante um ano. Sessenta dias após o atendimento, a adesão ao tratamento farmacológico e a continuidade do tratamento em caráter ambulatorial foram avaliadas através de contato telefônico. *Resultados:* 227 pacientes (68,8%) receberam prescrição de medicações psicotrópicas. Todos os pacientes foram encaminhados para serviços psiquiátricos ambulatoriais. Cento e setenta e cinco pacientes concordaram em receber o contato telefônico. Desses pacientes, 97 (63,4%) estavam usando a medicação prescrita e 83 (54,2%) haviam marcado consulta após 60 dias. Os pacientes que receberam uma prescrição tiveram maior chance de estar em uso de medicações psicotrópicas no contato do seguimento (RC 2,88; IC 95% 1,33-6,22; p = 0,007). Entretanto, a prescrição não foi associada ao agendamento de consulta ambulatorial (RC 0,76; IC 95% 0,036-1,61; p = 0,475). *Conclusões:* Medicações psicotrópicas são prescritas rotineiramente para pacientes atendidos em SEP, mas esta prática não aumentou a adesão ao encaminhamento para tratamento ambulatorial após dois meses.

Introduction

Over the last three decades, mental health policy changed dramatically around the world and psychiatric emergency services (PES) have become an important component of the mental health system. The deinstitutionalization strategy implemented in Brazil has not included PES as a key service in the new national mental health organization.[1-4] A recent review about PES and their relationship with the mental health network in Brazil reported that data related to psychiatric emergency is scarce and there is no information concerning PES distribution in Brazilian territory.[5]

However, in the city of São Paulo, PESs are essential to the mental health system because they function as a door leading to psychiatric inpatient – and sometimes outpatient – public treatment.[6-8] Nowadays, 16 public PESs are responsible for a population of more than 10,000,000 inhabitants. According to non-systematic reports from clinicians working in these services, it seems that this number is dissonant with the decrease in psychiatric beds and inadequacy of community psychiatric services secondary to the new mental health policy. As a result, PES facilities turned out to be settings to initiate definitive psychiatry treatment and for making referrals for community mental health care.

This assumption can be corroborated in some way by three recent papers on mental health reform in Brazil.[5,9,10] Even in high income countries, studies reported that the service delivery model for PES differs broadly by site.[11] There is no consensus in psychiatric literature on whether PES should provide definitive diagnostic evaluation and treatment initiation or simply provide acute emergency management.[12-14]

In São Paulo, it is not feasible to refer a patient to a pre-scheduled follow-up community visit, but provisory treatment can be initiated at the PES. Patients can be referred to a mental health service in their catchment area, but follow-through is uncertain. The purpose of this study was to describe psychiatric and demographic characteristics of patients discharged from the largest PES in São Paulo and to follow up 60 days after the index visit to assess compliance to the prescribed medical treatment and to the community referral.

Method

This study was conducted at a PES of a public university at Faculdade de Medicina da Santa Casa (CAISM) in São Paulo City, Brazil, which is responsible for a catchment area with about 1,300,000 inhabitants. This PES provides full-range assessment and treatment 24 hours a day. Public health policy is meant to avoid unnecessary hospitalizations, trying to maintain as many patients as possible in community treatment. Based on this principle, the service provides comprehensive medical evaluation in order to determine the best approach for patients: (a) referral to an inpatient setting, (b) continuing observation in the PES setting, or (c) referral to outpatient care with or without a prescription.

Data on demographics, clinical characteristics and mental health service utilization were collected from patients who visited CAISM, between June 2007 and January 2008. Psychiatry residents trained by the main investigator filled out a questionnaire developed for this study. A previous version of this questionnaire was previously tested on 300 patients in the same center in order to verify its applicability. This evaluation was done in March 2007 in order to verify the patients' catchment area profile and train psychiatry residents and medical assistants on how to fill it in.[6] Further adjustments were made before the final version used in the current study. This questionnaire can be obtained by contacting the corresponding author.

All clinical diagnoses were performed after a discussion with an experienced clinical psychiatrist. In the study period, there were 5,054 consultations, corresponding to 3,687 patients. Only data regarding the first visit to the PES was analyzed. Of the 3,687 individuals, 2,345 did not need to stay at PES for further observation neither a referral to an inpatient treatment. They were discharged with an outpatient psychiatric referral, with or without prescription. Among these individuals, a convenience sample of 330 patients agreed to participate in the study. Detailed demographic and clinical data were obtained from this sample using the instrument described above. These patients were compared to the total number of discharged patients in the period (n = 2,345). The only significant difference between the groups was that subjects from the study sample were more likely to seek the PES due to somatic complains. Out of the study baseline sample (n = 330), 175 (53%) subjects agreed to a follow-up interview call within 60 days of the index PES visit (the follow-up sample). During the phone interview, patients were asked about their outpatient treatment status and the compliance to medication prescribed at the PES. After three attempts, 22 patients were unable to be contacted.

The study protocol was approved by the ethic committees of the Universidade Federal de São Paulo and Faculdade de Medicina da Santa Casa under registration numbers 1648/07 and 089/07. Written informed consents were obtained from all individuals after the procedure had been fully explained. Whenever patients were not able to give adequate informed consent, it was obtained from their legal caregiver.

Statistical analysis was performed using SPSS 15.0. Dichotomous variables were analyzed by Chi-Square test. Group differences were presented using descriptive statistics with odds ratio and corresponding 95% confidence intervals (CIs). Logistic binary regression was used to verify main clinical outcomes: [1] the adherence to medication prescribed at the PES and [2] outpatient treatment status. All statistical tests were two-tailed with an alfa level of 0.05.

Results

Demographic and clinical characteristics

The mean age of the study sample (n = 330) was 40 years (range 7-98; SD 15.02) and 54.8% of the individuals were female. More than half were employed (54.8%) and unmarried (54.2%). The vast majority lived with their families (83.9%). Table 1 summarizes main demographic and clinical data, comparing individuals who did and did not agree to the follow up interview. Patients in the follow-up group (n = 175) were more likely to be employed (p = 0.02) and to live with their families (p < 0.01), less likely to be using psychiatric medication (p < 0.01) and less likely to have had a past psychiatric hospitalization (p < 0.01).

As for clinical diagnosis, there were more patients with psychotic disorders in the group who refused to be interviewed than in the follow-up group (27.7% vs 12%). Those with anxiety disorders were more likely than others to agree to follow-up (25.1% vs 8.4%).

Nearly 70% of the subjects received a prescription of at least one psychotropic drug, and almost 50% received two different medications. The most commonly prescribed drugs were: SSRI antidepressants (45.4%), benzodiazepines (41.8%), typical antipsychotics (22.4%), mood stabilizers (15.1%), and atypical antipsychotics (12.1%).

Table 1 Demographic and clinical characteristics comparing follow-up group and patients who did not agree to the follow-up interview

	Follow-up group (n = 175)	Patients who did not agree to respond to the follow-up interview (n = 155)	p
Female n(%)	102 (58.3)	79 (51.0)	0.18
Mean Age (SD), y	39.02 (14.36)	40.54 (15.74)	0.28
Married n(%)	73 (41.7)	72 (48.3)	0.23
Living with family n(%)	157 (89.7)	120 (78.9)	0.01
Employed n(%)	108 (62.1)	73 (49.0)	0.02
Clinical diagnosis			
Use of substances n(%)	25 (14.3)	26 (16.8)	0.0001
Psychotic disorders n(%)	21 (12.0)	43 (27.7)	
Mood disorders n(%)	73 (41.7)	60 (38.7)	
Anxiety disorders n(%)	44 (25.1)	13 (8.4)	
Personality disorders n(%)	4 (2.3)	2 (1.3)	
Other n(%)	8 (4.6)	11 (7.1)	
Clinical variables			
First time at a PES n(%)	82 (46.9)	60(38.7)	0.14
Using psychiatry medication at index PES visit n(%)	106 (60.9)	111 (73.5)	0.002
Past psychiatric hospitalization n(%)	30 (17.2)	47 (31.5)	0.003
PES Conduct: prescribing medication n(%)	126 (72.0)	101 (69.2)	0.58

PES: Psychiatric Emergency Service.

Follow-up outcomes - outpatient treatment status

Out of the initial follow-up sample, 22 patients were unable to be contacted by phone 60 days after the index visit and 153 (87.4%) patients comprised the follow-up group. Eighty three patients (54.2%) of the follow-up group (n = 153) either scheduled or were attending psychiatry outpatient treatment within 60 days of the PES visit. As displayed in Table 2, there were no significant differences between patients who complied or not to treatment regarding demographic and clinical variables. In addition, prescribing medication to these subjects at the PES was not associated with greater probability of seeking outpatient treatment at the follow-up.

The most common reasons given for not scheduling psychiatric medical appointments were: (a) unavailable public mental health service (33.9%), (b) lack of interest in continuing psychiatry treatment (32.1%) and (c) the distance to the referred psychiatric outpatient service (16.1%).

Follow-up outcome - the adherence to medication prescribed at the PES

Ninety-seven patients (63.4%) were using psychotropic medication. There was no relevant statistical difference considering demographic variables between the group using medication at follow-up or the group withou using it, as seen in Table 3. However, there was an increased chance of people with previous use of medication (RR 2.61; CI 95% 1.32-5.19) or with current psychiatric treatment (RR 2.29; CI 95% 1.13-4.64) to be using medication at the follow-up. Patients who received medical prescription at discharge had a higher probability of continuing the use of medication at follow-up (RR 353; CI 95% 1.68-7.43).

Out of 97 patients using medication at follow up, 72 (74.2%) had scheduled or went to an outpatient psychiatric appointment (OR 11.78; CI 95% 5.3-26.25; $p < 0.0001$). The main reasons for stopping medication were: (a) side effects (16%), (b) lack of the prescribed medication at public units (14%), (c) cost of the medication when not available through the public health system (8%), (d) no refill after running out of the prescribed medication (6%) and (e) patient decision to discontinue it (4%).

Logistic Regression

A logistic regression was performed using the two main follow-up outcomes of the study as dependent variables. Independent variables used were: previous use of psychotropic medication, previous psychiatric consultation and the PES medical conduct (prescribing psychiatric medication). The use of medication at follow-up was positively related to

Table 2 Demographic and clinical characteristics of patients comparing outpatient psychiatry treatment status within 60 days after the PES visit

	Ongoing or scheduled PsOT	Not receiving PsOT	p	OR (CI 95%)
Female, n(%)	50 (60.2)	38 (54.3)	0.46	1.28 (0.67-2.43)
Age yrs, Mean (SD)	38.70 (15.41)	37.54 (13.53)	0.45	
Married n(%)	37 (44.6)	27 (38.6)	0.45	0.78 (0.41-1.49)
Living with family, n(%)	72 (86.7	66 (94.3)	0.11	2.52 (0.76-8.30)
Employed, n(%)	36 (43.4	25 (36.2)	0.37	1.35 (0.70-2.60)
Using psychiatry medication at PES visit, n(%)	54 (65.1)	40 (58.0)	0.40	1.35 (0.70-2.60)
Attending to regular outpatient psychiatry treatment at index PES visit, n(%)	39 (47.0)	24 (34.8)	0.14	1.66 (0.86-3.20)
Past psychiatric hospitalization, n(%)	15 (18.1)	11 (15.9)	0.83	1.16 (0.50-2.73)
PES Conduct – prescribing medication, n(%)	60 (72.3)	52 (74.3)	0.85	0.90 (0.44-1.85)

PsOT: psychiatric outpatient treatment; PES: Psychiatric Emergency Service.

Table 3 Comparison of main demographical variables among patients that were or were not using medication at follow-up

	Using PsMF	Not using PsMF	p	OR (CI 95%)
Female, n(%)	60 (61.9)	28 (50.0)	0.15	1.62 (0.83-3.15)
Age yrs, Mean (SD)	38.43(15.08)	37.71 (13.72)	0.56	
Married, n(%)	45 (46.4)	19 (33.9)	0.13	0.60 (0.30-1.17)
Living with family, n(%)	88 (90.7)	50 (89.3)	0.77	0.58 (0.29-2.53)
Employed, n(%)	62 (63.9)	29 (52.7)	0.18	0.63 (0.32-1.23)
Using psychiatry medication at index PES visit, n(%)	68 (70.1)	26 (47.3)	0.01	2.61 (1.32-5.19)
Attending to regular outpatient psychiatry treatment at the time of PES visit. n(%)	47 (48.5)	16 (29.1)	0.03	2.29 (1.13-4.64)
Past psychiatric hospitalization, n(%)	19 (19.6)	7 (12.7)	0.37	1.67 (0.65-4.27)
PES Conduct – prescribing medication, n(%)	80 (82.5)	32 (57.1)	0.001	3.53 (1.68-7.43)

PsMF: psychotropic medication at follow-up; PES: Psychiatric Emergency Service.

Table 4 Logistic Regression - dependent variable - use of medication at follow-up

	ββ	SD	p	Exp b	CI 95%
Attending to regular outpatient psychiatry treatment at the time of PES visit	0.366	0.440	0.406	1.441	0.608-3.416
Using psychiatry medication at index PES visit	0.606	0.428	0.157	1.833	0.791-4.244
PES Conduct – prescribing medication	1.056	0.393	0.007	2.876	1.330-6.217

R^2 = 0.811 (Hosmer e Lemeshow); 0.100 (Cox e Snell); 0.137 (Nagelkerke); Chi-Square = 15.96.

Table 5 Logistic Regression - dependent variable - outpatient treatment status

	β	SD	p	Exp b	CI 95%
Attending to regular outpatient psychiatry treatment at the time of PES visit	0.514	0.401	0.201	1.671	0.761-3.671
Using psychiatry medication at index PES visit	0.609	0.406	0.865	1.071	0.483-2.377
PES Conduct – prescribing medication	-0.275	0.385	0.475	0.759	0.357-1.615

R^2 = 0.330 (Hosmer e Lemeshow); 0.019 (Cox e Snell); 0.025 (Nagelkerke); Chi-Square = 2.85.

receiving a prescription medication at PES (OR 2.88; CI 95% 1.33-6.22; p = 0.007), as shown in Table 4. Nonetheless, the prescription of psychiatric medication at the PES was not associated with the outpatient treatment status, as seen in Table 5 (OR 0.76; CI 95% 0.036-1.61; p = 0.475).

Discussion

The main aim of this study was to describe social and psychiatric characteristics of patients discharged from an academic PES in São Paulo and to assess, after 60 days, compliance with the psychiatric advice provided by the PES.

Some of the patients received new medication or a renewal of a previous prescription, but all patients were referred to an outpatient mental health service. As mentioned before, it is not feasible to refer a patient for a pre-scheduled follow up visit in São Paulo. Patients can be referred to a mental health service in their catchment area, but it is never certain if they will be accepted to initiate their treatment or to maintain their ongoing care. A sample of 330 discharged patients after a medical appointment agreed to participate in this study. These patients were compared to all 2,345 patients discharged during the study period and there were no relevant differences between them. Of the 330 patients enrolled in the study, 175 (53%) agreed to a follow-up telephone interview. As shown in our results, the group that refused follow-up comprised more severe and chronic patients.

The results showed that nearly 70% of the subjects received a prescription of at least one psychotropic drug and almost 50% received two different medications. These rates are similar to the results reported by another study in Brazil,[11] but are more than two times the frequency found in a study carried out in the United States.[9] Ernst et al.[12] conducted a study in an urban PES in Massachusetts to evaluate the nature and prevalence of medication prescriptions for patients discharged from an academic PES and the extent to which pharmacotherapy initiation was predictive of compliance to outpatient care. Patients who were not under treatment in community mental health services were routinely referred to the outpatient department of an affiliated community service and had appointments scheduled within one week, a completely different scenario from ours. Nevertheless, similarly to our findings, there was small evidence that initiating medications in the emergency setting promotes more successful bridging to outpatient treatment, suggesting that the criteria to initiate definitive treatment at PES should be reevaluated. These results corroborate the findings from a study conducted in Ireland: being previously known by the referral psychiatric outpatient service was the only statistically significant predictor of compliance to outpatient appointments.[15]

It is worth noting that 50% of the patients were not able to make an appointment due to staff shortages at the community health unit they were referred to, and to the lack of psychiatric services reasonably close to where they lived. This indicates that the mental health network still needs to be improved in São Paulo, as pointed out by recent reviews.[11,16]

Almost 60% of the patients were taking psychiatric medication at follow-up. Patients who received a psychotropic prescription at PES were three times more likely to be taking medication 60 days after the visit. This association is interesting and raises a question about how these patients got a new prescription, given that in Brazil prescriptions of psychotropic medications are only valid for one month. Our hypothesis is that these patients obtained a new prescription re-visiting a PES in this period, as a substantial proportion of subjects could not attend psychiatric consultation at the referred settings. This is supported by reports that repeated use of PES is a frequent phenomenon, associated with inadequate social status and serious psychiatric problems.[17]

SSRI antidepressants were the most prescribed medication category, which is in accordance to literature on clinicians' preferences when prescribing antidepressants.[18-20]

The main limitations of the study were the use a non-validated questionnaire and the enrollment of a non-random convenience sample, although there were few significant differences to all discharged patients in the study. This study was conducted at one of the 16 PESs of São Paulo and maybe these results could not be generalized for all settings. It is

important to note that almost 50% of the sample refused to receive a follow-up call. The patients who refused to participate were more chronic and severe, which means that the findings would probably be different, showing a worse scenario – less patients taking medication and not following medical advice to seek referral.

Conclusions

To our knowledge, this is the first study carried out in Brazil, with a longitudinal design, which conducted follow-ups on patients discharged from PES. Prescription of psychotropic medication at the PES visit was associated with its use after 2 months, but it was not associated with outpatient psychiatry service utilization.

Psychotropic medication were prescribed to more than 70% of the discharged patients. While it is probably an advantage that most patients were complying to medication two months after the PES visit, negative findings on continuity of care may reflect insufficient community services and misuse of hospital emergency rooms.

Disclosures

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** Modest*
*** Significant*
**** Significant: Amounts given to the author's institution or to a colleague for research in which the author has participation, not directly to the author.*

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