

Treatment dropout at a secondary mental health service

Abandono de tratamento em serviço secundário de saúde mental

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Abstract

Objective: To investigate mental health dropout rates in secondary care and to identify possible associations between this variable and social, demographic, psychopathologic, and health care process-related variables.

Method: This prospective, observational study included 994 patients referred to a secondary service by four primary care units and evaluated by a specialist mental health team between 2004 and 2008. The dependent variable was treatment dropout. Bivariate analyses investigated possible associations between treatment dropout and 57 independent variables.

Results: The overall dropout rate from specialist mental health treatment was relatively low (mean = 25.6%). Only four independent variables were associated with dropout: one socioeconomic, two psychopathological, and one health care process variable. All associations were marginally significant ($p < 0.1$).

Conclusion: Our findings suggest that family members, patients, and health care professionals are well engaged in this mental health care system based on a model of primary care. The use of this mental health model of care should be extended to other regions of our country.

Keywords: Patient dropouts, mental health, secondary health care, quality of health care.

Resumo

Objetivo: Investigar a taxa de abandono de tratamento no nível secundário de saúde mental e identificar possíveis associações entre abandono e variáveis sociais, demográficas, psicopatológicas e do processo de cuidado.

Métodos: Este estudo observacional, prospectivo, incluiu 994 pacientes referenciados a serviço secundário por quatro unidades básicas de saúde e avaliados por uma equipe especialista em saúde mental entre 2004 e 2008. A variável independente foi abandono de tratamento. Análises bivariadas investigaram possíveis associações entre abandono e 57 variáveis independentes de diferentes dimensões.

Resultados: A taxa geral de abandono de tratamento especialista foi relativamente baixa (média = 25,6%). Apenas quatro variáveis independentes se mostraram associadas a abandono: uma sociodemográfica, duas psicopatológicas, e uma relativa ao processo de cuidado. Todas as associações foram marginalmente significativas ($p < 0,1$).

Conclusões: Os resultados sugerem bom engajamento de pacientes, familiares e profissionais nesse sistema de atenção à saúde mental focado no modelo da atenção primária. A utilização desse modelo de assistência em saúde mental deveria ser estendido a outras regiões do país.

Descritores: Abandono do tratamento, saúde mental, atenção secundária, qualidade da assistência à saúde.

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Introduction

Mental disorders cause a great deal of suffering. The care of patients with mental problems is insufficient in terms of both quantity and quality of services available. Initiatives that contribute to increase adherence rates are necessary to reduce both mental and physical impairments and related economic impacts.¹

Several authors have investigated the factors associated with mental health treatment dropout in different health care systems over the past 15 years. Even though some particularities and methodological differences can be observed in the literature –limiting comparisons –, overall results are relatively consistent. Among the factors regularly evidenced as being associated with higher dropout rates in mental health treatment at both primary and secondary health care levels, the following stand out: type of service provider and/or characteristics of health care²⁻⁶; professional responsible for referring the patient^{7,8}; time waiting for specialist treatment and difficulties scheduling appointments^{9,10}; patients' beliefs and expectations.^{2,3,9}

Notwithstanding, when the influence of sociodemographic and economic factors,^{2,3,5,7,8,11,12} clinical factors^{3,5,7,9,11-13} – especially those related with diagnosis and condition severity –, and different treatment modalities² are analyzed, results are extremely conflicting. In fact, to date, no factors or patterns have been consistently associated with mental health treatment dropout.

The objective of this study was to assess treatment dropout rates at a secondary health care center of the Municipal Mental Health System of Juiz de Fora (Sistema Municipal de Saúde Mental de Juiz de Fora, SMSM-JF) and to identify possible associations between the outcome and 57 independent variables corresponding to different dimensions, namely, sociodemographic, psychopathological, and health care process dimensions.

Method

The SMSM-JF system, implemented in 2000, comprises 11 regional mental health centers, each one covering a specific area of the municipality of Juiz de Fora, MG. The west region referral center (Centro Regional de Referência em Saúde Mental – Oeste), which will be described in the present study, holds learning and clinical practice activities of the Psychiatry and Medical Psychology Service of the University Hospital (Hospital Universitário da Universidade Federal de Juiz de Fora, HU-UFJF). At the center, professors and psychiatry residents treat patients referred by west region primary

services, amalgamating two levels of health care. The health care model referred to in the present study has been described in detail elsewhere.^{14,15}

Before starting data collection, all professionals working at the primary health care units covered by the west region referral center underwent a short training session on diagnostic hypotheses and patient referral and treatment. The teams of each health center met monthly with investigators of the Psychiatry and Medical Psychology Service at HU-UFJF to ensure continuous improvement of the health care process. According to the management protocols of the SMSM-JF system, primary health centers were expected to refer only more severe patients to the secondary level of care. At the end of the initial evaluation, the team of the referral center could either send patients back to follow-up at the primary health center or further refer them to programs specifically designed to deal with specific diagnoses.¹⁶

This exploratory observational study prospectively followed the medical records of 994 patients referred to the west region referral center who attended the first appointment over four different time periods: April 1st 2004 to March 31st 2005, April 1st 2005 to March 31st 2006, April 1st 2006 to March 31st 2007, and April 1st 2007 to March 31st 2008. The start of each period was determined taking into consideration that most patients were seen by resident psychiatrists, who start training in February or March each year, and that a 30-day period would be recommended to allow residents to adapt to the health care model.

Patients with one of the following characteristics were not included: a) patients younger than 18 years at the first appointment; b) patients for whom age was not recorded on the chart; c) patients whose charts failed to inform the date of the first or last appointment; d) patients with no information available on treatment status (outcome of interest).

The main variable of the study was treatment status, which was classified into two categories: whether or not there was treatment dropout. The health care standards indicated in the management protocols of the SMSM-JF system¹⁶ recommend that patients should have their treatment status defined by the specialist team of the referral center within 60 days from the date of referral. Based on this recommendation, treatment status was assessed every year by the authors of the present study, based on medical charts, always in the month of May following each period. Treatment dropout was determined when the patient attended the first appointment at the west region referral center but missed subsequent appointments during the period assessed, until the end of May, regardless of treatment duration. Taking into

Table 1 – Characterization of independent variables

Group	Dimension	Indicator	Variable	Category/Combination
Sociodemographic and economic profile	Biological	Sex	Gender	Male vs. Female
		Age	Chronological age (self-report)	Up to 42 years vs. 43 years or more
	Sociocultural	Skin color	Predominant characteristic identified	White vs. Other
		Education level	Last school grade attended (self-report)	Up to Finished elementary school vs. Unfinished high school or more
		Marital status	Current status	Single/divorced/widow vs. Married/partnership
		Children	Has children	Yes vs. No
		Religion	Religion (self-report)/attendance to services	Catholic vs. Other
		Economic status	Income from economic activity (self-report)	Up to one minimum wage vs. More than one minimum wage
		People at home	Economically dependent on someone else	Yes vs. No
			Lives alone	Yes vs. No
Clinical profile	Psychopathological and interactive	Psychiatric examination	Attitudes towards the examiner (cooperative, suspicious, hostile, defensive, seductive, shy, authoritative, ambiguous, confident, actively and/or passively resistant)	Yes vs. No
			Patient's ability to locate him/herself in time in relation to place and his/her self, immediate fixation memory, recent memory, remote memory, and short-term memory	Good vs. Impaired vs. Not sure
			Attention, thought (production, course, and content), consciousness, sensory perception	No significant abnormalities vs. Significant abnormalities present
			Intelligence, impulse control/frustration tolerance, information reliability, insight, and motivation for treatment	High vs. Average vs. Low
			Way how patient tends to report problems	Adequate vs. Attenuated vs. Exaggerated
			Basic affective disposition	Abnormalities vs. No abnormalities
			Affective stability	Stable vs. Unstable
			Affective adequacy	Adequate vs. Inadequate
			Affective relationship	Vital/endogenous vs. Fantastic/imaginary vs. Real/actual vs. Not sure
			Diagnostic	Psychiatric
Diagnosis established at the regional mental health referral center	Organic mental disorder vs. Psychoactive substance use disorder vs. Psychotic/delusional disorder vs. Mood disorder vs. Anxiety disorder vs. Personality disorder			
Primary diagnosis (regrouped)	Mild and moderate common mental disorders vs. Severe mental disorders vs. Psychoactive substance use disorder vs. Other diagnoses			

(cont.)

Table 1 – Characterization of independent variables (cont.)

Group	Dimension	Indicator	Variable	Category/Combination
		Diagnostic hypotheses of the primary health center and diagnosis of the secondary mental health service	Diagnostic agreement of patients assessed	Diagnostic hypotheses not informed by primary health center vs. Diagnosis not informed by the referral center vs. Neither the primary health center nor the referral center teams provided information on diagnosis vs. Diagnostic disagreement with referral center vs. Diagnostic agreement with referral center
Health care dynamics (health care process)	Primary health center/referral center interface	Date of inclusion in the study	Date of first appointment (April 1st to March 31st of following year)	1 (2004/2005) vs. 2 (2005/2006) vs. 3 (2006/2007) vs. 4 (2007/2008)
		Referring primary health center	Primary health center responsible for referring the patient	Borboleta vs. Santos Dumont vs. São Pedro vs. Teixeiras
		Quality of information sent to the referral center	Availability of sociodemographic variables on the referral form	Not available vs. Available but incomplete vs. Available and complete
			Availability of summarized medical history on the referral form	Yes vs. No
			Availability of clinical variables on the referral form	Not available vs. Available but incomplete vs. Available and complete
		Person in charge of referral	Profession of person in charge of referrals	Participation of a physician vs. No participation of a physician
	Health care process at the referral center	Type of treatment adopted	Treatment modalities initiated	Pharmacological only vs. Other therapies
		Treatment duration	Number of treatment days	Presence of symbolic modality vs. Absence of symbolic modality
				Up to 60 days vs. More than 60 days

consideration that initial appointments always took place between April of a given year and March of the following year, and considering a uniform distribution, this criteria yielded a mean time of 7 months of patient follow-up, with a maximum of 14 months. Patients classified in the treatment retention group where those who were still being treated at the secondary health care service (referral center) at the end of May following each study period, or those who were referred to special programs or sent back to the original primary health centers for follow-up during the same period.

Demographic and socioeconomic variables were assessed based on the semi-structured clinical records used in the SMSM-JF system or via combinations of original categories. Most data were collected from the referral form filled in by the primary health center team or from charts kept at the referral center. Variables were used to calculate the median of continuous variables related to the total sample of patients or to create combinations aiming at transforming variables with more than two categories into binary variables. This strategy was used for the following variables: skin color, white or other; marital status, single/divorced/widow or married/partnership; religion, Catholic or other; education level, up to finished elementary school or unfinished high school

or more; income, up to one minimum wage or more than one minimum wage (Table 1). A category corresponding to no data available was used in all variables in the bivariate analyses, as will be described below.

Psychopathological and interactive variables refer to the psychiatric examination; interactive variables deal with different aspects of the specialist-patient relationship (e.g. information reliability, the way how the patient reports problems, motivation for treatment, etc.) covered in the semi-structured clinical records used in the SMSM-JF system. In the psychiatric examination chart, different attitudes of patients towards the examiner (total of 12 independent variables) are described in the semi-structured chart using yes/no questions. Another 17 variables have the following answer options: a) good, impaired, not sure, or unable to assess; b) no significant abnormalities, significant abnormalities, not sure, or unable to assess; c) high, average, low, not sure, or unable to assess.

Regardless of the variable assessed, the options not sure and unable to assess were subsequently grouped and combined with cases of no data available (based on the low frequency of responses in the two former categories).

The variables professional in charge of referral, type of treatment adopted, and treatment duration at the

secondary level were the only ones answered by the research team after analysis of patient records. Considering the health care protocols used in the SMSM-JF system, treatment duration at the secondary level was classified into two categories: up to 60 days or more than 60 days.

Type of treatment adopted was classified into the following categories: only assessment/advice, only symbolic treatment modality, only pharmacological treatment, symbolic and pharmacological treatment, or no data available. Symbolic treatment modalities were defined as any psychotherapeutic intervention offered by professionals at the referral center.¹⁷ These categories were combined into two options: a) treatment focused on a pharmacological approach, with the subcategories pharmacological treatment only, other (including all other treatment modalities or their combination), and no data available (for cases with no information on treatment); and b) treatment focused on a psychotherapeutic approach, also with three subcategories, namely, presence of symbolic modality, absence of symbolic modality, and no data available.

The quality of referral was assessed using two variables based on the availability of sociodemographic and clinical information, both categorized as not available, available but incomplete, or available and complete. A variable was also created to assess the profession of those in charge of referral: referral made by a physician or with the participation of a physician, referral made without the participation of a physician, or no data available.

The possible influence of diagnostic hypotheses indicated by the primary health center team and of the diagnoses established by the team of the referral center was assessed using a combined variable with the following categories: a) diagnostic hypothesis not informed by the primary health center; b) primary diagnosis not informed by the referral center; c) neither the diagnostic hypothesis was informed by the primary health center nor the primary diagnosis by the referral center; d) diagnostic hypothesis and diagnosis informed, but according to specialist opinion, the patient does not present a psychiatric illness or syndrome compatible with the diagnostic hypothesis informed by the primary health center; e) diagnostic hypothesis and diagnosis have been informed and are consistent. In this assessment, it was necessary to discard cases presenting with more than one diagnostic hypothesis, as well as those in which the diagnoses established at the referral center were not compatible with the six diagnostic categories available for the team of the primary health center, namely, anxiety/neurotic disorder, psychotic/delusional disorder, affective (mood) disorder, psychoactive substance use disorder, organic mental disorder, personality disorder.

Also, considering the association between severity of psychiatric disorder and dropout rate, a variable was created to combine the diagnoses established into four major groups of mental disorders, in addition to the no data available category: 1) mild and moderate common mental disorders, including anxiety disorders, mild or moderate depressive disorders or episodes; 2) severe mental disorders, including the disorders in the F20 group of the International Classification of Diseases, Tenth Revision (ICD-10) (schizophrenia and other psychotic disorders), manic episodes or bipolar disorder, severe depressive disorders or episodes; 3) psychoactive substance use disorder, including the diagnostic categories F10 to F19.9 of the ICD-10; and 4) other diagnoses.^{18,19}

The 57 independent variables were first analyzed in an exploratory manner. A bivariate analysis was used to investigate possible associations between the independent variables and the outcome of interest (treatment status). In order to identify a possible influence of the unavailability of some data, this category was considered as a separate answer option for all variables where the phenomenon was observed. In order not to bias analyses based on any criteria a priori, bivariate analyses were conducted for all independent variables, using the combinations mentioned above.

Significance of the associations was assessed using the chi-square test, and marginally significant results ($p < 0.1$) would be subsequently included in a multivariate model.

The study research project was designed in agreement with the ethical principles set forth in the Declaration of Helsinki and was approved by the Research Ethics Committee of HU-UFJF and UFJF (protocol nos. 377.062.2004, 1112.158.2007, and 1412.103.2008).

Results

Of the 994 referred patients who attended the first appointment, 66.3% were female, 46.0% were either married or in a stable relationship, 63.2% had children, 54.6% reported being Catholic, 60.7% had low education levels (up to finished elementary school), 47.1% referred having a monthly income of up to one minimum wage, and 48.8% were economically dependent on someone else. The most frequent diagnosis was mood disorder (30.8%), and the most common treatment modality was pharmacological only (66.4%). Mean treatment dropout at the secondary level, considering all four periods analyzed, was 25.6%, ranging from a minimum of 23.9% in the first period to a maximum of 28% in the third period ($p = 0.774$). The percentage of no data available varied from 4.2% (treatment modality) to 29.6% (income).

In the bivariate analyses, four variables showed associations, although marginally significant ones, with treatment dropout; of these, the categories with the highest percentage rates of dropout were the following: treatment duration under 60 days ($p = 0.000$), income below one minimum wage ($p = 0.076$), high impulse control/frustration tolerance ($p = 0.050$), and average level of insight ($p = 0.006$) (Table 2).

Table 2 – Variables associated with treatment dropout in the bivariate analysis

Variable/category	Treatment status (%)		p
	No dropout	Dropout	
Treatment duration			
Up to 60 days	68.0	32.0	
More than 60 days	84.8	15.2	0.000
Income			
Up to one minimum wage	77.8	22.2	
More than one minimum wage	71.6	28.4	
No data available	71.4	28.6	0.076
Impulse control/frustration tolerance			
High	69.2	30.8	
Average	72.7	27.3	
Low	82.6	17.4	
No data available	75.7	24.3	0.050
Insight			
High	73.7	26.3	
Average	68.9	31.1	
Low	82.5	17.5	
No data available	77.5	22.5	0.006

When excluding from the analyses patients with no data available for each of the independent variables assessed, the only difference was a marginally significant association between increased dropout rates and referral made without the participation of a physician ($p = 0.079$ vs. 0.213 when including the no data available category; data not shown).

Taking into consideration the exploratory aims of the present study, as well as the small number of variables with at least marginally significant associations with treatment dropout or no dropout, the authors decided not to perform the multivariate model.

Discussion

Studies with different designs assessing treatment dropout at specialist services have reported dropout rates ranging from 22.3 to 46%.^{3,6,11,20} A number of authors has evidenced that patient adherence may be associated with the quality of referral to a specialist service. According to Matas et al.,⁷ the factor most frequently associated with missed appointments is the type of service responsible for referral: 32.8% of patients referred by emergency departments did not attend the specialist appointment scheduled, compared with 11.2 and 8.6% of those referred by primary and secondary

health care services, respectively. Professionals and services with a more participative approach, i.e., those that involve the patient in treatment decision-making,⁵ or those offering a greater deal of social support,⁴ tend to present lower rates of dropout. In this scenario, it is important to emphasize that in the present study it was not possible to identify any association between treatment dropout and the two variables related with quality of referral and health care.

Compared with the results of Melo & Guimarães,⁸ who showed high rates of treatment dropout among patients spontaneously seeking specialist mental health services in Brazil, the relatively low rate of attrition observed in the four periods analyzed in the present study point to an effective model of mental health care between the primary and secondary levels of care. It is important to emphasize that no association was observed between treatment dropout and treatment modality adopted.

Recent studies have produced conflicting results regarding the association between mental health treatment dropout and demographic and socioeconomic factors. According to Young et al.,¹² Edlund et al.,² Rossi et al.,⁵ and Wang,²⁰ younger patients have a higher chance of abandoning treatment. Rossi et al.⁵ and Gonzalez et al.,³ in turn, suggested that married patients are less likely to drop out of treatment, whereas Young et al.¹² reached the opposite conclusion. From a different standpoint, Young et al.,¹² Edlund et al.,² Rossi et al.,⁵ and Wang²⁰ did not identify associations between sex and education level of patients who dropped out of treatment. Percudani et al.¹¹ and Melo & Guimarães et al.⁸ found a positive association between male sex and treatment dropout. Finally, Rossi et al.,⁵ Percudani et al.,¹¹ and Wang²⁰ did not observe significant correlations between employment status and treatment attrition.

None of the variables mentioned above was associated with treatment dropout in our sample. Rather, only income showed a correlation, i.e., subjects in the lowest income category were less likely to abandon treatment. In addition to the fact that patients with mild and moderate common mental disorders were more frequently classified in the income category of more than one minimum wage (61.1 vs. 54.9%, $p = 0.478$; data not shown), it is possible to infer that those with a higher income were more interested in resuming work, leading to attrition as a result of the fact that treatment is offered only during working hours.

Few investigators have assessed the association between psychological and interactive characteristics and psychiatric treatment dropout. Conversely, several studies have addressed the influence of psychiatric diagnosis on this outcome. According to Melo & Guimarães,⁸ the use of alcohol or drugs upon admission

would be significantly associated with higher treatment dropout rates. The results of Percudani et al.¹¹ indicate that patients with neurotic or personality disorders were less likely to drop out of treatment when compared with patients with psychotic disorders. For Rossi et al.⁵ and Young et al.,¹² a diagnosis of schizophrenia would be associated with lower rates of dropout; similarly, Amaral²¹ concluded that non-psychotic patients showed a lower degree of adherence to outpatient services. Dobscha et al.¹³ concluded that patients with major depression had the highest chance of treatment dropout; for Wang,²⁰ patients with mood and psychoactive substance use disorders are more likely to abandon treatment when compared with patients with other diagnoses.

Even though we have not observed an association between treatment dropout and diagnosis, two psychopathological and interactive variables showed marginally significant associations with attrition, suggesting that patients with more severe disorders show better adherence. This hypothesis is corroborated by the high dropout rate observed in our patients diagnosed with mild and moderate common mental disorders, of 28.4%, compared with rates ranging from 21.5 to 21.6% in the other diagnostic categories (severe mental disorders, psychoactive substance use disorder, and other diagnoses, considered separately and not taking into consideration the no data available category) ($p = 0.176$; data not shown). In a study assessing psychoanalytic psychotherapy dropout, Hauck et al.²² reported statistical associations between attrition and a lower level of insight and more immature defense mechanisms.

When analyzing data on the professional in charge of referral, the category without the participation of a physician was associated with higher rates of treatment dropout. One possible hypothesis for future studies would be that the participation of physicians would contribute to a better qualification of referral for patients who indeed need to be referred to specialist treatment, requiring a more regular attendance to appointments.

In our study, the variable most strongly associated with treatment dropout was treatment duration at the secondary level: patients who stayed under treatment at the secondary level of health care for over 60 days dropped out of treatment significantly less often than those being treated for up to 60 days. This result is compatible with the hypothesis that the patients who better adhere to secondary health care are precisely those more in need of specialist treatment, with their (and their families') expectations probably being more satisfactorily met.

Few studies have prospectively assessed variables associated with treatment dropout at the interface between the primary and secondary levels of care. In

spite of some important limitations of the design of the present study, discussed in detail elsewhere,²³ our results (including the high number of subjects) suggest that few sociodemographic, clinical, and health care process-related variables are associated with treatment dropout in bivariate analyses.

Overall, the studies reviewed presented the following types of discrepancies: a) inclusion/exclusion criteria; b) period of time investigated; and c) variables assessed. Such heterogeneity in methods has contributed toward a low level of agreement across results with regard to risk or protection factors for treatment dropout, and also limits the comparison of data.

Gonzalez et al.³ had already indicated the need to study treatment adherence in relation to individual factors, e.g., patient experiences, beliefs, knowledge, and preferences, in an attempt to improve adherence rates and thus reduce negative effects on the mental health and consequently on the physical health of the users of these services.

Considering that the investigation of treatment dropout can help identify flaws in the services provided,¹² the present results seem to indicate that: a) the studied population probably had already overcome the difficulty underscored by Amaral²¹ of recognizing the primary health care network as a treatment option – or at least as a first option – for the treatment of mental health problems; and b) contradicting the findings of Luchese et al.,²⁴ primary health care teams seem to be well engaged in this mental health care system and ready to develop their roles within the referral system.

Conclusion

In this study, only four of 57 variables assessed were associated with treatment dropout, and only at a marginally significant level: a) one sociodemographic variable (income); b) two psychopathological variables (impulse control/frustration tolerance and level of insight); and c) one related to the health care process (treatment duration at the secondary health care service). Our results point to the possibility of improving the quality of health care by refining the referral process from the first to the second level of care. They also suggest a good engagement of professionals, patients, and family members in the mental health care services provided through a system based on the primary care model. Future studies should assess the effectiveness of this mental health care model in comparison with the dominant model in our country, i.e., demand-centered and focusing on specialist services.

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