

# Premature psychotherapy termination in an outpatient treatment program for personality disorders: a survival analysis

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## Abstract

**Objective:** Psychological treatment for patients with personality disorders (PD) is plagued with a high proportion of early dropouts, and attempts to identify risk factors for attrition have generated very few conclusive results. The purpose of the present study is to identify significant predictors of early treatment termination in a long-term psychotherapy program for PD.

**Methods:** Data was retrospectively retrieved from 174 files of patients who began long-term psychotherapy in an outpatient treatment program in Québec City, Canada. Socio-demographic, initial disturbance, and diagnostic variables were considered for prediction, along with a measure specifically designed to identify PD patients at risk of dropping out early from psychotherapy, the Treatment Attrition-Retention Scale for Personality Disorders (TARS-PD). Survival analysis using Cox proportional hazard regression was performed to identify significant predictors.

**Results:** Results using univariate Cox proportional hazards regressions revealed that unemployment, Global Assessment of Functioning scores, and recent hetero-aggressive behavior were significant predictors of early dropout in the first six months of therapy. Adjusting for these three confounders, four of the factor scores from the TARS-PD (Narcissism, Secondary gains, Low distress, and Cluster A features) were significantly associated with dropout in univariate Cox proportional hazards regressions. Secondary gains and Narcissism remained significant predictors after entering all five TARS-PD factors in a multivariate Cox proportional hazards regression adjusting for confounders.

**Conclusions:** Taking into consideration specific treatment prognosis variables, such as those measured by the TARS-PD, might be more useful for dropout prediction in PD patients in comparison with more general demographic and diagnostic variables.

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## 1. Introduction

Personality disorders (PD) affect about 10–13% of the general population [1]. These conditions impact various aspects of daily and psychological functioning. PD diagnoses are notably associated with impaired social functioning and interpersonal conflicts [2–3]. Further, PDs are associated with increased risk for hospitalization [4], criminality [5], and suicidal behavior [6], which may ensue from severe affect dysregulation, poor impulse control, and/or confusion over one's own sense of identity. Even though forms of treatment

specifically tailored to this population have been developed and validated over the past 20 years [7–12], there is still an important heterogeneity in patients with regard to their capacity to fully benefit from biopsychosocial treatments. One out of four patients will discontinue psychological treatment prematurely according to recent meta-analytic results [13]. Early dropout or early treatment discontinuation has been linked to various damaging consequences for patients, including poorer treatment outcomes in patients with borderline [14–19], antisocial [20–22], and narcissistic PD [23]. Treatment non-completion may also lead to greater societal costs. Borderline PD patients who dropped out from treatment were found to stay three times longer in hospitals than treatment completers [24]. In forensic settings, PD patients who dropped out from an inpatient treatment program were more likely to reoffend in a five-year follow-up period in

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comparison with completers [25]. A study conducted in a forensic setting in the United Kingdom revealed that patients who did not complete treatment in a medium security hospital PD unit incurred £52,000 (approximately \$80,000 USD) more in costs to the National Health Service over a period of 10 years following admission [26]. Other potential consequences of treatment dropout include compromised service cost-efficiency, waste of limited and valuable clinical resources, diminished staff morale, denial of services to others patients in need, and disruption of therapy groups [27].

Systematic research on factors associated with dropout in PD patients has yielded up few conclusive and comprehensive results thus far [13,27]. Only a handful of variables, including younger age [28–31], complex PD presentations [15,24,32], high impulsivity [33–34], and poor therapeutic alliance [18,32,35–36], have been more consistently identified as predictors of attrition. Recently, however, a clinically-informed scale specifically tailored to assess a set of pre-treatment variables associated with early psychotherapy termination in PD patients, the Treatment Attrition-Retention Scale for Personality Disorders (TARS-PD) [37], has been developed and validated. An investigation of its psychometric properties has revealed promising results in terms of predictive validity for the global scale and its five factors (i.e., Narcissism, Antisociality, Secondary gains, Low distress, and Cluster A features). Despite these encouraging results, much work still needs to be done to understand early dropout from psychological treatment in PD patients; more studies to determine the best predictors, as well as the relationships between them, are in order.

Survival analysis has been shown to be a potent approach to prediction of early termination from day hospital [29] and long-term treatment [30,36] in PD patients. However, these studies have generally investigated large sets of disparate pre-treatment variables from multiple categories (e.g., socio-demographic, diagnostic, etc.), and have not focused on variables specifically chosen for treatment prognosis prediction. The purpose of the present study is to test the predictive power of different categories of pre-treatment variables, including variables from the TARS-PD which specifically target dropout prediction, to study early psychotherapy termination in a sample of PD patients after six months of a three-year outpatient treatment program. Cox proportional hazards regression models will be used. Four categories of predictive variables will be evaluated: socio-demographic, initial disturbance, diagnostic, and specific treatment prognosis variables (TARS-PD global score and factors). We hypothesize that very few variables from the first three categories will significantly predict treatment dropout, while specific treatment prognosis variables from the TARS-PD should be significant predictors.

## 2. Method

### 2.1. Participants

Files from 320 individuals (203 women, 117 men), who were consecutively assessed from September 2007 to December

2011 for admission at the Faubourg Saint-Jean Treatment Center, were reviewed. This outpatient clinic is linked to the Quebec Mental Health University Institute, a psychiatric hospital in Quebec City, Canada. All 320 patients were referred to the treatment center following a medical reference for an initial evaluation of suitability for inclusion in a three-year outpatient psychotherapy program. This treatment is integrative [38] and follows hierarchical treatment goals. The first six months focus on safety, containment, symptom reduction and management of impulsive behaviors; it includes psycho-educational group psychotherapy (e.g., on distress tolerance and interpersonal effectiveness skills) inspired by Linehan's Dialectical-Behavior Therapy (DBT) [39], and bimonthly individual therapy. After six months, treatment focus shifts to improving mentalizing skills and interpersonal functioning, and modifying core self- and other representations, with weekly individual 45- to 50-minute psychotherapy sessions, mostly inspired by evidence-based psychodynamic practice – i.e., Transference-focused psychotherapy [40] and Mentalization-based treatment [41] tactics and strategies. Inclusion criteria for the treatment program include age  $\geq 18$  years old, the presence of a moderate to severe personality disorder as main diagnosis, and the absence of severe antisocial personality features.

From these 320 patients, 174 (54.4%) began therapy at the treatment facility following assessment, while others ( $n = 146$ ) who did not fit the treatment center's mandate (e.g., had no personality disorder, or had an Axis I disorder as primary diagnosis) were referred to a more appropriate treatment resource. Analyses in the present study will focus on the 174 patients who began psychotherapy. Institutional ethical guidelines for research using archival data were followed in the conduct of the present study.

### 2.2. Procedure and measures

As aforementioned, information was retrieved from assessment files included in a database of 320 patients consecutively referred to the Faubourg Saint-Jean Treatment Center for an initial intake evaluation of suitability for the psychotherapy treatment program. These evaluations were conducted by eight licensed clinical psychologists, with an experience with PD patients ranging from one to eleven years ( $M = 5.1$ ,  $SD = 3.4$ ), and by two supervised trainees who were graduate students in psychology. These intake evaluations generally last from 120 to 150 min, and are complemented by a thorough review of each patient's clinical files, which include notes and clinical reports from previous treatments and hospitalizations. Areas assessed during these interviews include:

- (a) Socio-demographic information;
- (b) Baseline evaluation of initial disturbance. Various areas of pre-treatment disturbance were assessed at intake, and were scored dichotomously (presence vs absence): recent self-injurious or suicidal behavior; recent suicidal ideation; recent hetero-aggressive or violent behavior; recent substance abuse problems;

- previous psychiatric hospitalizations; and previous unsuccessful psychiatric treatment;
- (c) Level of functioning in major life areas, including the Global Assessment of Functioning (GAF) [42] rating. The GAF is a scale ranging from 1 to 100 designed to rate a patient's social, occupational, and psychological functioning, with higher scores indicative of superior functioning. A review by Monrad Aas [43] (2010) suggests good overall reliability for the scale (with ICC figures as high as .86 in some studies) [44], although some concerns exist regarding its concurrent and predictive validity;
  - (d) Borderline symptomatology using the Diagnostic Interview for Borderlines – Revised (DIB-R) [45]. The DIB-R is a semi-structured interview designed to assess four areas related to borderline PD: Affect, Cognition, Impulse Action Patterns, and Interpersonal Relationships. The interview includes 97 items rated according to thoughts, feelings, and behaviors reported by the patient over a two-year period. These items determine the scores on 24 subsections, which are then used to calculate scores on the four aforementioned areas. Borderline pathology is considered present when the sum of these four scores, which ranges from 0 to 10, is  $\geq 8$ . Zanarini, Frankenburg and Vujanovic [46] report excellent inter-rater reliability and very good test-retest reliability for the instrument;
  - (e) Primary PD diagnosis according to DSM-IV-TR [47], using the Clinical Diagnostic Interview's probes for assessing mental and physical health [48]. All diagnoses are assigned by consensus after review of each case during weekly meetings between five clinical psychologists from the treatment center; and
  - (f) TARS-PD [37] scoring, which is made after intake based on the initial interview and the content of the patient's clinical file. The TARS-PD was designed to identify patients more likely to dropout prematurely from psychological treatment, to disrupt it (in group settings, for example), or to use it counterproductively (e.g., to escape legal consequences). It includes 15 items scored on a three-point scale (from 0, "not at all or barely descriptive of the patient", to 2, "highly descriptive of the patient"). Gamache et al. [37] revealed that the TARS-PD provides a global prognosis score that can be obtained with excellent inter-rater reliability. Exploratory factor analysis showed that five factors underlie the scale: Narcissism, which consists of four items from the scale (Hostility, Projective defenses, Spitefulness, Envy); Antisociality (Massive countertransference, Psychopathy, Sadism); Secondary Gains (Extrinsic motivation to treatment, Passive lifestyle, Poor life conditions); Low distress (Absence of subjective distress, Refusal to make sacrifices for therapy); and Cluster A features (Suspiciousness, Hostility, Social isolation, Massive

countertransference). The scale possesses a high specificity (.94) for scores  $\geq 10$ , and positive likelihood ratio figure using the same cut-off suggested an estimated increase in dropout probability of 30 to 35%. In the present study, reliability was computed on a random subsample of 32 files; ICC was excellent for the TARS-PD global score (0.87, CI [0.75–0.93]), and ranged between .55 (Antisociality, CI [0.26–0.75]) and 0.80 (Narcissism, CI [0.63–0.90]) for its five factors.

### 2.3. Statistical analyses

Analyses were computed using SPSS 24.0. Cox proportional hazards regression models were used to identify predictors of treatment dropout. In order to minimize the confounding effect of treatment approaches, we chose six months as the dropout target; indeed, the therapy format during the first six months is much more homogenous in terms of approach, setting and frequency in comparison with treatment dispensed for the remainder of the program (which is mostly inspired by – but not limited to – evidence-based psychodynamic approaches). Variables from four categories were considered: (a) socio-demographic information; (b) measures of initial disturbance; (c) diagnostic information; and (d) specific treatment prognosis scores from the TARS-PD.

Data analysis involved two steps. As aforementioned, it was hypothesized that variables from the latter category would be significantly associated with dropout, given that they were specifically chosen as measures of risk for early treatment termination. Consequently, variables from the first three categories were considered as potential "confounding variables". In a first phase, each potentially confounding variable was examined in a univariate analysis; the goal of this first step was to identify those that were independently associated with premature termination. Hazard ratios (HR) and 95% confidence intervals (CI) were computed for each of these variables. A final step involved testing specific TARS-PD scores, both unadjusted and adjusted by taking into account significant confounders identified during the first phase.

## 3. Results

### 3.1. Patient characteristics

Participants' (64 male, 110 female) mean age was 34.7 years old ( $SD = 11.7$ ). All were French-speaking, and all but two patients (98.9%) were of white ethnicity. Most (57.6%) were single, about one third (36.6%) were married or living with a partner, while 5.8% were divorced. Slightly more than half (52%) were unemployed at the time of the assessment, while 48% worked full-time or part-time, or were attending school. Consequently, most were benefiting from social security or disability payments (64.5%). Most had

high school (42.6%) or post-high-school (41.4%) education. Less than 20% (17.2%) had a criminal record.

All 174 patients had an Axis II disorder as their primary diagnosis, in line with the treatment facility's inclusion criteria. Participants had an average of 1.56 DSM-IV-TR PD diagnoses ( $SD = 0.77$ ). Primary diagnoses were as follows: Borderline = 60.9%; narcissistic = 28.7%; histrionic = 2.9%; antisocial = 2.3%; schizotypal = 2.3%; dependent = 1.7%; schizoid = 0.6%; and paranoid = 0.6%. GAF evaluation ranged from 35 to 65 ( $M = 51.6$ ,  $SD = 5.5$ ), and scores on the TARS-PD ranged from 0 to 18 ( $M = 6.0$ ,  $SD = 3.5$ ). According to DIB-R evaluation, 61.3% of the participants had a borderline PD (disorder is considered present with a score of eight or above according to the authors of the instrument [47]); mean DIB-R score for all participants was 7.5 ( $SD = 1.8$ ). Over 80% (80.9%) of the participants were taking psychiatric medication at the time of the assessment (antidepressants = 62.0%; antipsychotics = 60.1%; anxiolytics = 33.1%; hypnotics = 15.3%; mood stabilizers = 10.4%; psycho-stimulants = 5.5%). On average, participants took medication from 1.76 different categories from the above ( $SD = 1.26$ ).

### 3.2. Premature termination

Seventy-one (40.8%) patients were no longer in treatment after six months. Patients who dropped out prematurely stayed in treatment for an average 2.12 months ( $SD = 1.59$ ). Over 60% of attrition occurred during the first two months ( $n = 43$ , 60.5%).

### 3.3. Univariate predictors of premature termination

#### 3.3.1. Demographic variables

Univariate analysis of socio-demographic variables (see Table 1) revealed that unemployment or absence of an active life role had the highest Hazard Ratio (HR) of all socio-demographic predictors (HR = 1.80, 95% CI [1.10–2.95],  $p = 0.02$ ; see Fig. 1). HR is a relative measure of effect that can be interpreted here as a ratio of dropout probability. Thus, unemployment or absence of an active life is associated with an increase of 1.8 in the odds of dropping out early from therapy; individuals with this characteristic have a 64% risk (Probability:  $P = HR/[1 + HR]$ ) of dropping out first in comparison to individuals who are employed and maintain an active life role [49]. Gender was close to being significant ( $p = 0.07$ ), with men more likely to drop out prematurely. No other variable was a significant predictor.

#### 3.3.2. Initial disturbance

Global Assessment of Functioning (GAF) scores had a significant negative association with dropout, i.e. higher scores were associated with treatment continuation at six months (HR = 0.96, 95% CI [0.92–1.00],  $p = 0.04$ ). Presence of recent hetero-aggressive or violent behavior had a positive significant association with dropout (HR = 1.89, 95% CI [1.17–3.05],  $p = 0.009$ ; see Fig. 2).

#### 3.3.3. PD diagnosis

No significant univariate associations were found between the main PD diagnosis and dropout (see Table 2).

Table 1

Unadjusted hazard ratios (HR) with 95% confidence intervals (CI) for premature termination from psychological treatment associated with socio-demographic variables (N = 174)

Variable	Dropouts ( $n = 71$ )	Continuers ( $n = 103$ )	HR	95% CI	$p$ value
Age	36.28 ± 12.49	33.58 ± 10.98	1.01	0.99–1.03	0.17
Gender					0.07
Female	39 (55)	71 (69)	Reference	–	
Male	32 (45)	32 (31)	1.56	0.98–2.49	
Marital status					0.88
Single	42 (59)	57 (55)	Reference	–	
Married	24 (34)	39 (38)	0.97	0.35–2.70	
Divorced	4 (6)	6 (6)	0.86	0.30–2.46	
Missing	1 (1)	1 (1)			
Education					0.81
<High school	11 (15)	16 (16)	Reference	–	
High school	31 (44)	41 (40)	1.03	0.51–2.09	
>High school	27 (38)	43 (42)	1.18	0.70–1.97	
Missing	2 (3)	3 (3)			
Number of children	0.76 ± 1.08	0.86 ± 1.14	0.95	0.76–1.18	0.61
Employment or active life role (e.g. studies)					0.02
Yes	25 (35)	57 (55)	Reference	–	
No	43 (61)	46 (45)	1.80	1.10–2.95	
Missing	3 (4)	0 (0)			
Criminal record					0.38
No	55 (77)	85 (83)	Reference	–	
Yes	14 (20)	15 (15)	1.30	0.74–2.34	
Missing	2 (3)	3 (3)			

Numbers and (percentages) are indicated, except for age and number of children (mean ± standard deviation). HR = hazard ratios. CI = confidence intervals.

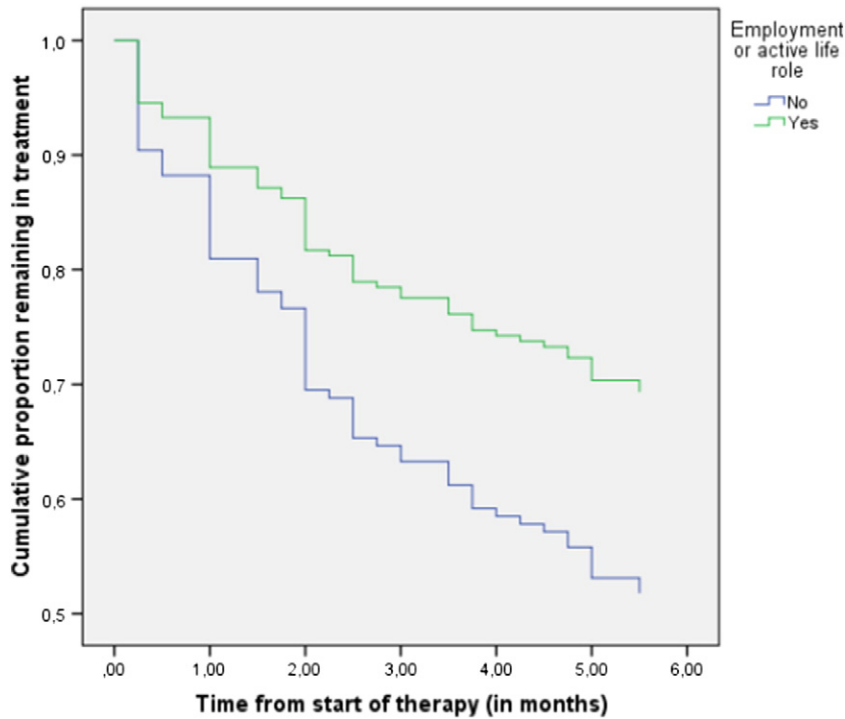


Fig. 1. Kaplan-Meier curves illustrating time to treatment dropout stratified by presence/absence of employment or active life role (e.g., studies).

### 3.4. Specific treatment prognosis scores

A series of analyses were computed to determine the associations between premature termination and specific treatment prognosis scores. First, univariate Cox proportional

hazards regressions were computed individually for the global TARS-PD score and the five TARS-PD factors. Second, univariate Cox proportional hazards regressions were performed for all aforementioned variables, adjusting for significant confounders ( $p < 0.05$ ) identified in previous

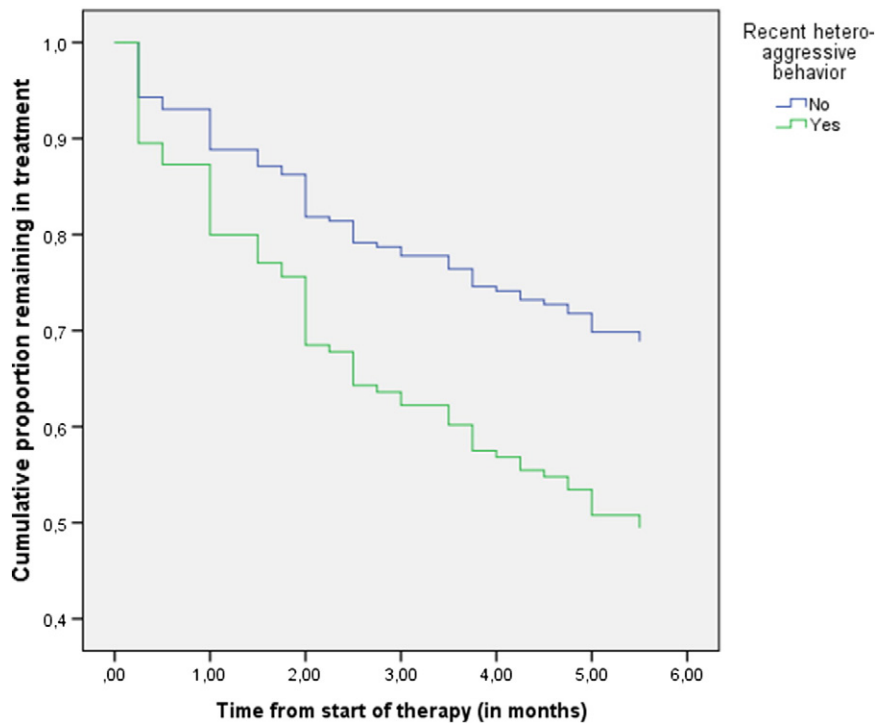


Fig. 2. Kaplan-Meier curves illustrating time to treatment dropout stratified by presence/absence of recent hetero-aggressive behavior.

Table 2

Unadjusted hazard ratios (HR) with 95% confidence intervals (CI) for premature termination from psychological treatment associated with initial disturbance and diagnostic variables (N = 174)

Variable	Dropouts (n = 71)	Continuers (n = 103)	HR	95% CI	p value
Global Assessment of Functioning score	50.56 ± 5.74	52.36 ± 5.22	0.96	0.92–1.00	0.04
Categories of psychiatric medication	1.73 ± 1.28	1.77 ± 1.25	0.96	0.80–1.16	0.69
Number of PD diagnoses	1.59 ± 0.76	1.54 ± 0.78	1.09	0.78–1.52	0.60
DIB-R total score	7.54 ± 1.73	7.49 ± 1.85	1.01	0.88–1.15	0.92
DIB-R Affect score	1.89 ± 0.32	1.89 ± 0.37	0.90	0.47–1.67	0.71
DIB-R Cognition score	1.04 ± 0.58	0.91 ± 0.66	1.29	0.89–1.87	0.18
DIB-R Impulse Action Patterns score	1.93 ± 1.15	2.09 ± 1.10	0.90	0.74–1.11	0.33
DIB-R Interpersonal Relationships score	2.69 ± 0.65	2.59 ± 0.81	1.13	0.80–1.60	0.48
Recent suicidal/self-injurious behavior					0.35
No	28 (39)	35 (34)	Reference	–	
Yes	43 (61)	68 (66)	0.80	0.49–1.28	
Recent suicidal ideation					0.59
No	10 (14)	12 (12)	Reference	–	
Yes	61 (86)	91 (88)	0.83	0.43–1.62	
Recent hetero-aggressive behavior					0.009
No	27 (38)	61 (59)	Reference	–	
Yes	44 (62)	42 (41)	1.89	1.17–3.05	
Recent substance use problems					0.76
No	23 (32)	35 (34)	Reference	–	
Yes	48 (68)	68 (66)	1.08	0.66–1.78	
Previous psychiatric hospitalizations					0.45
No	35 (49)	42 (41)	Reference	–	
Yes	36 (51)	61 (59)	0.84	0.52–1.33	
Previous unsuccessful psychiatric treatment					0.55
No	11 (15)	13 (13)	Reference	–	
Yes	60 (85)	90 (88)	0.82	0.43–1.56	
Main PD diagnosis					0.57
Dependent	1 (1)	2 (2)	Reference	–	
Histrionic	1 (1)	4 (4)	0.51	0.03–8.08	
Narcissistic	25 (35)	25 (24)	1.73	0.23–12.77	
Borderline	40 (56)	66 (64)	1.17	0.16–8.50	
Antisocial	3 (4)	1 (1)	3.14	0.33–30.21	
Paranoid	0 (0)	1 (1)	0.98	–	
Schizoid	0 (0)	1 (1)	0.98	–	
Schizotypal	1 (1)	3 (3)	0.80	0.05–12.82	

Mean ± standard deviation, or numbers and (percentages) are indicated. PD = Personality disorder. DIB-R = Diagnostic Interview for Borderlines – Revised. HR = hazard ratios. CI = confidence intervals.

steps (i.e., unemployment or absence of an active life role, GAF scores, and recent hetero-aggressive or violent behavior); significant confounders were entered as covariates in a separate block in these univariate Cox regressions. Finally, a multivariate Cox proportional hazards regression including all five TARS-PD dimensions, adjusted for significant confounders following the aforementioned procedure, was performed (see Table 3). Unadjusted results from the univariate analysis show that the TARS-PD global score (HR = 1.21, 95% CI [1.14–1.28],  $p = 0.001$ ) and all of its factor scores (see Table 3) have a significant positive association with premature termination. After adjustment for significant confounders, results for the TARS-PD global score (HR = 1.21, 95% CI [1.12–1.29],  $p = 0.001$ ) and all of its factors except Antisociality remain significant at  $p < 0.05$ . When all five TARS-PD dimensions are entered in a multivariate Cox proportional hazards regression adjusted for significant confounders, Narcissism and Secondary gains

remain significant predictors of dropout, the latter being associated with the highest HR (1.39).

#### 4. Discussion

The main objective of the current investigation was to add to the existing literature on factors associated with premature treatment termination in PD patients. A more specific goal was to determine the predictive power of specific treatment prognosis variables.

Analyses revealed that one socio-demographic variable (Unemployment or absence of an active life role), and two initial disturbance variables (Recent hetero-aggressive behavior and GAF score), were significant ( $p < 0.05$ ) predictors of early treatment termination. Unemployment has been linked to early dropout from day hospital treatment in PD patients in a previous investigation [15], but other empirical

Table 3

Univariate (unadjusted and adjusted for confounders) and multivariate Cox proportional hazards regression models for dropout prediction using variables from the Treatment Prognosis Scale for Personality Disorders (TARS-PD) with 95% confidence intervals ( $n = 171$ )<sup>a</sup>

Variable (score range in brackets)	Dropouts ( $n = 71$ )	Continuers ( $n = 103$ )	Univariate analyses, unadjusted		Univariate analyses, adjusted for confounders		Multivariate model, adjusted for confounders	
			HR [95% CI]		HR [95% CI]		HR [95% CI]	
			$p$ value		$p$ value		$p$ value	
TARS-PD Narcissism factor (0–8)	3.15 ± 1.86	1.93 ± 1.71	1.30 [1.16–1.46] 0.001	1.25 [1.11–1.41] 0.001	1.17 [1.03–1.34] 0.02			
TARS-PD Antisociality factor (0–6)	0.58 ± 0.98	0.26 ± 0.71	1.32 [1.07–1.64] 0.01	1.25 [0.99–1.57] 0.06	1.07 [0.83–1.37] 0.62			
TARS-PD Secondary gains factor (0–6)	2.35 ± 1.65	1.28 ± 1.20	1.47 [1.27–1.70] 0.001	1.52 [1.27–1.82] 0.001	1.39 [1.14–1.68] 0.001			
TARS-PD Low distress factor (0–4)	0.90 ± 0.90	0.63 ± 0.79	1.34 [1.03–1.73] 0.03	1.50 [1.16–1.95] 0.002	1.26 [0.95–1.65] 0.10			
TARS-PD Cluster A features factor (0–8)	1.90 ± 1.57	1.16 ± 1.24	1.26 [1.09–1.46] 0.002	1.20 [1.03–1.40] 0.02	1.12 [0.92–1.36] 0.25			

<sup>a</sup> Three patients did not have complete data and were therefore excluded from analyses. TARS-PD = Treatment Prognosis Scale for Personality Disorders. HR = hazard ratios. CI = confidence intervals.

works have found the two to be unrelated [28,50–51]. Involvement in an active life role, including employment, has been identified as crucial to recovery by various PD scholars [52]; behavioral activation, or participation-engagement in fulfilling and satisfactory life goals, may be a key to treatment with PD patients [53–54]. These claims are supported by a recent study in a PD patient sample which revealed that attaining external achievements by engaging in diverse roles (e.g., parenting, leisure activities, education, volunteer work, employment) contributed to boost patients' confidence and helped them achieve recovery [55]. Passivity in PD patients may stem from a lack of agency or self-direction, and different PDs may involve different forms of passivity [54]. Yeomans et al. argue that most BPD patients are generally capable of functioning at work or at school, and that refusal to work or to attend school may arise from a combination of internal conflicts around functioning, emotional reactivity to others, and a wish to have external figures (e.g., family, governments) compensate for real or perceived mistreatment [41]. Thus, it would appear that identification of maladaptive traits, beliefs, attitudes and/or symptoms impeding participation in active life roles such as professional work should be targeted early in treatment. However, further research is warranted to deepen our understanding of the relationships between absence of involvement in an active life role and early dropout. Various hypotheses should be considered: they may have a common cause – e.g., a lack of sense of agency, a lack of self-directedness, or an impaired capacity for in-depth investment in personal goals; the patient might be conflicted about relinquishing secondary gains from a passive lifestyle, leading him to drop out of therapy when he feels that his lifestyle is threatened or confronted; the patient may be

fearful of losing his sense of freedom if the therapist suggests a more active life role; or it may reflect the use of avoidance as a strategy to deal with a fear of failure, rejection and/or humiliation in an occupational context. Conversely, it may also point to a lack of adequate rehabilitation programs to help PD patients overcome their impairments to lead an active life. Future investigation of these hypotheses is important because of their potential implications for clinical work in the early stage of psychotherapy with these patients.

Even though earlier studies have found levels of pre-treatment hostility or anger to be associated with dropout [30,56], no other investigation had specifically pointed out the role of recent hetero-aggressive behavior prior to treatment as a risk factor for dropout. The mechanism by which a recent history of hetero-aggressive behavior may lead to early treatment discontinuation remains unclear at this stage. It could be hypothesized that these behaviors are probably associated with personality traits such as hostility, anger or antagonism, known to be associated with dropout but not directly measured in the present study. Recent violent behavior may also negatively impact the development of a therapeutic alliance (e.g., by raising pervasive safety concerns in the therapist and hampering the development of an affective bond with the patient). Further, one important drawback from the present study is that we do not have specific information on the reasons for premature termination. In the presence of violent antecedents, we may speculate that at least some of these patients may have been excluded by the treatment staff for aggressive and/or intimidating behavior or attitudes in groups or individual therapy; some of them may have been incarcerated in the course of treatment (e.g., for assault). Future studies using a prospective design to more precisely monitor patients' trajectories would be helpful to answer such questions.

The TARS-PD global score, and four of its five factor scores, were significantly associated with treatment dropout in univariate analyses, after adjusting for confounding variables. The Antisociality factor, which was significant after the unadjusted univariate analysis, turned out to be nonsignificant after adjusting for confounding variables; its lower score variance, attributable for the most part to the exclusion of individuals with severe antisocial features in the present sample, very likely impacted results for this factor. In a preliminary validation study of the TARS-PD [37], the scale's global score and the five factor scores were shown to have predictive power to determine group membership (i.e., dropout or treatment retention) after six months of psychotherapy in a discriminant function analysis; Secondary gains and Narcissism were identified as the best predictors. Results from the present study also suggest that these two variables are the most robust dropout predictors from the TARS-PD, as they were the only two significant predictors following the multivariate Cox proportional hazards regression performed on all TARS-PD factors. The Secondary gains factor includes items pertaining to extrinsic motivation for treatment, poor life conditions, and passive lifestyle; of note, it remained the strongest risk factor even after adjusting for employment status. These results underline once again that active engagement in diverse life roles may be a protective factor facilitating treatment continuation. The Narcissism factor refers to a particular constellation of traits (Hostility, Projective defenses, Spitefulness, and Envy) linked to narcissistic pathology by some PD scholars [58–59]. Most of these traits are associated with narcissistic grandiosity [60–61], which has been associated with an increased likelihood of client-initiated termination in a previous study investigating the relationships between pathological narcissism and treatment utilization [62]. Earlier empirical works have also documented the relationships between dropout and hostility [30,56], and between dropout and primitive defenses [14]. Our results suggest that chronic hostility in the therapeutic relationship, the presence of projective defenses which are used to put the blame for one's own difficulties on others and to maintain a grandiose self-image, a pervasive spitefulness associated with past traumas which may be in service of self-aggrandizement (e.g., to see oneself as the innocent and indignant victim of malevolent persecutors, with fantasies of justice and reparation), and intense envy may negatively influence treatment retention, possibly by affecting the development of a therapeutic alliance. This suggestion should be investigated in further works. Low distress, which was a significant predictor of dropout in univariate analyses (both unadjusted and adjusted for confounders) but not in the multivariate model, includes items reflective of absence of subjective distress and refusal to make some necessary sacrifices to engage in psychotherapy (e.g., to abandon a thrilling antisocial lifestyle, or to regain control over substance abuse). Evidence of lesser emotional distress in dropout patients has been found in other studies [14–15,31]. McMurran et al. [27] point out that the experience of distress can be a motivator for engagement in psychotherapy, but that the association between subjective distress and treatment atten-

dance may be mediated by the type of treatment, with levels of distress being associated with attendance in supportive therapy but not in interpretive therapy [57]. Finally, Cluster A features, including items pertaining to suspiciousness and interpersonal isolation, also appear to impact treatment dropout as suggested by results from univariate analyses; it was not, however, a significant predictor in the multivariate model. Schizoid personality features have already been linked to treatment discontinuation [50]. Cluster A patients (schizoid and paranoid) have also been found to be more likely to be classified as “treatment rejecting” in a typology of PD patients proposed by Tyrer, Mitchard, Methuen, and Ranger [63]. Distrust of the therapist and/or other patients (e.g., in group settings), and severe impairment in the capacity to form and/or to maintain significant attachment bonds, are likely to disrupt therapy in both individual and group formats. It should be noted that results for the Narcissism factor and the Cluster A features factor obtained here are not tied to a formal PD diagnosis; specific PD diagnoses were not significantly related to early termination – though the very small number of Cluster A patients in the present sample precludes definitive conclusions.

For the most part, prior results on variables associated with early treatment discontinuation, with a few notable exceptions, have been sparse, rarely conclusive and often conflicting from one study to another. Results from the present study suggest that assessment of treatment prognosis factors using a scale specifically tailored to that purpose may be profitable to study dropout factors – perhaps even more than the investigation of multiple and often disparate patient characteristics and “need factors” (e.g., diagnosis, emotions, problem recognition and competencies, ego and defenses, and co-occurring problems [27]). Obviously, more work is needed on instruments such as the TARS-PD, which have been understudied thus far, to determine their definitive value for dropout prediction.

Some limitations to the present study need to be addressed. Dropout was measured after six months of a three-year outpatient psychotherapy program; variables associated with very early (i.e., in the first two months) or later dropout may be different from those identified here. We did not have access to data that would allow an assessment of the relationship between premature termination and treatment response in the present sample. We also did not have access to a complete list of Axis I diagnoses in patients' files, as assessment at the treatment facility mainly focused on personality pathology; it should be noted, however, that previous research failed to link Axis I comorbidity with dropout [13]. The retrospective nature of the study also precluded inter-reliability checks on the DIB-R and the GAF. PD diagnoses were assigned after a 120–150 minutes intake evaluation based on DSM criteria and were reviewed during weekly meetings by a team of five clinical psychologists; however, no formal structured or unstructured interview was used to determine PD diagnoses other than BPD (for which the DIB-R was used), and no formal reliability checks could be made. Another important drawback is that we did not have access to information regarding the reasons for dropout. Generalization of the results is limited by



the homogeneity of the sample in terms of ethnicity (all but two were from a Caucasian-white ethnicity); further, we do not know at this time whether our results, obtained in the course of a three-year integrative psychotherapy program, would be applicable to other treatment settings and approaches. Of note, variables identified as predictors in the present study are different from those found by Ogrodniczuk et al. [29], who conducted survival analysis in a sample of PD patients in a day hospital setting, in which treatment was more intensive and did not exceed 18 weeks. Their investigation identified previous psychiatric hospitalizations, younger age, fewer prior contacts with health and social services, and more severe BPD traits as significant predictors of dropout. Further works should include measures of therapy processes (e.g., alliance) and therapist variables (e.g., countertransference) to study the dropout phenomenon in all its complexity; possible avenues for investigation include the exploration of the potential interaction between specific configurations of dropout variables and countertransference responses to increase dropout risk, and the potential mediating role of dropout variables between therapeutic alliance and poor treatment response. For example, narcissistic features and low motivation in the patient may activate disengagement responses in the therapist, hampering the development of a therapeutic alliance and creating favorable conditions for early dropout.

The principal strength of the present investigation is the use of a systematic, comprehensive multivariate model to study dropout. It also includes a relatively large clinical sample of PD patients in a naturalistic clinical setting. Benefits of empirical works aiming to identify risk factors for early treatment discontinuation are numerous. As pointed out by Ogrodniczuk et al. [29], “risk factors” should not be equated with “barriers to treatment” or “untreatability”. On the contrary, early identification of patients at risk of dropping out from psychological treatment may be very useful for treatment planning: these patients may be allocated to more seasoned therapists; they may benefit from motivation enhancement strategies [64] from the outset; the course of their treatment may be monitored more closely (e.g., for early detection of alliance ruptures); and risk factors may be openly discussed between patient and therapist during the contract setting phase of treatment, in order to proactively identify potential threats to treatment. Ultimately, early identification of risk factors for premature treatment discontinuation may prove useful to improve retention rates and treatment outcomes in PD patients.

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### Declaration of interest

None of the authors has any conflicts of interest to declare.

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