How Do Patients' Attendance Profiles Influence Psychotherapy Terminations? A Preliminary Exploration

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Abstract

Objectives: In this study, we intended to examine the differences in patients' attendance profile during psychotherapy process among three patient groups who ultimately completed treatment, prematurely terminate treatment with or without informing therapist in advance. We also attempted to find an effective predicting model to discriminate those three groups. **Methods:** We used the data of the process notes of 982 time-limited individual therapy sessions over five years, composing of 97 adult patients who were treated by a therapist in a Taiwan psychiatric center. We analyzed 10 attendance variables retrospectively in coded session by session. **Results:** Three patient groups existed with notable differences in their punctuality, cancellation, no-show, treatment-stage attendance, and overall attendance rates. But no clear difference was observed in the other six variables (time change, early or delayed leave, between-session contact, and evaluation-stage attendance rates). Cancellation and no show were effective variables to distinguish three patient groups. The overall correct predicting rate of the regression model was 67%, and the individual correct predicting rate for treatment completers, informers, and noninformers was 75%, 52.8%, and 75.9%, respectively. No show as a variable clearly discriminated completers from noninformers and informers from noninformers, whereas cancellation variable clearly distinguished completers from informers. **Conclusion:** Patients with and without informing their therapists before premature termination showed different characteristics. Cancellation and no show in each therapy session were pre-dropout warning signs for later premature termination. Those two behaviors had substantial implications and strong predicting power on the patients' termination conditions.

Key words: cancellation, dropout, no show, premature termination
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Introduction

Subtypes of premature termination

Premature termination in psychotherapy impacts on patients, therapists, therapeutic relationship, treatment institutions, researchers, and the general public to different degree [1-8]. The fact that patients unilaterally terminate therapy without previous notice brings on even more influence, it frustrates therapists, wastes precious therapeutic resources, and leaves the reasons behind premature termination unanswered, resulting in the barriers of therapy unprocessed. But the literature on therapy premature termination hardly distinguishes different types of premature terminators (PTs). The only paper differentiating the informing and noninforming PTs showed that only one-third of the PTs has informed therapists before termination [4]. In comparison to patients with informing PT, those without informing PT tend to be women, attend fewer than four sessions, or have relatively low global functions [4].

Communication beyond words

The therapeutic alliance is one of the powerful predictors of PT and the improvement of therapeutic alliance can reduce

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premature termination (PT) risk [1, 9, 10]. But the literature on therapeutic alliance showed that several limitations (such as focusing on early alliance formation, the one-point alliance score, or the alliance in general, as well as using the subjective and retrospective methods) undermine result reliability [11].

Since theoretical concept, therapeutic alliance, and rupture are less observable, how the therapeutic alliance manifests in patients' behaviors within practical therapy sessions is still unclear. Only two empirical trials on the relationship exist between therapeutic alliance and PT at session level [5, 11]. Both studies showed that PTs withdraw themselves from therapeutic interaction and they are less explored during the unrepaired "pre-dropout sessions" [5, 11]. In addition, conversations about ending the therapy initiated by patients are only seen in temporary alliance rupture sessions, but not in predropout sessions [11]. It means that the patients with the actual PTs less initiate any termination speech with their therapists, but just leave therapy. Therefore, PT inclination may not be expressed from patients' talking.

Patients' verbalizations are not fully conveying feelings about the therapeutic relationship, particularly those negative feelings that are not easily accepted by society [12, 13]. Sometimes, actions can even contradict verbal expressions. Many patients that they have indicated the need for therapy or are satisfied with the therapeutic outcome fail to attend subsequent scheduled sessions [14]. Some authors found that 25% of patients find their therapy not necessarily helpful but did not inform therapists about this; they rather stated their mental health condition had improved and then terminate therapy [15]. Actions sometimes speak louder than words; emotions not expressed frankly tend to be released through actions. For example, research showed that PT is frequently preceded with cancelled and missed sessions [16].

Temporal structure and time regulations of psychotherapy

If the understanding of PT cannot simply rely on patients' conscious verbalization, then what else cues? A study suggested that focusing on patients' reactions to the structure of psychotherapy may facilitate therapeutic alliance, thereby to reduce PT rate [17]. It has also cautioned the therapists to carefully evaluate patients' reactions to therapeutic norms, restrictions, and boundaries during the contract building stage [17]. Those structural regulations are foundation of therapeutic alliance; schism in the therapeutic alliance (as an abstract concept) may be reflected in the rupture of therapy structure (as a concrete behavior). It is hypothesized that a patient's handling style of individual therapy session (for example, no show) might reflect his handling tendency of a whole therapeutic relationship (for example, PT), becasue both involve being absent without inform therapist in advance.

The structure of psychotherapy is an essential part of therapeutic contract, consisting of numerous requirements, one of which is the temporal structure [3]. Temporal structure entails social regulations on patients including determining a fixed time slot for therapy and attending regularly, arriving and leaving the sessions as punctually as possible, cancelling the appointments in advance if cannot attend, avoiding making unnecessary contact with psychotherapists outside of sessions, and refraining from arbitrary changes to therapy time. Since therapists can usually observe those patient behaviors easily during the session in their routine practice, they are convenient and concrete indicators for PT study and may add external and ecological validity to the research.

Patients' nonattendance of therapy, particularly in the early phase, disrupts the therapeutic alliance, structure, boundaries, and continuity, causing stagnation and other negative influences [18], even might ultimately leading to PT. In fact, patients' history of failed treatment attendance can predict PT [19, 20]. Inferring from this statement, other special attendance behaviors that do not conform to therapeutic time regulations might also cause negative effects on the therapeutic relationship, thereby undermining the therapeutic outcome or leading to PT.

Even some scholars have mentioned the importance of cancellation, no show, or absence in therapy [14, 21], empirical literature on the connections between various attendance behaviors and PT is scant. While searching the PT and attendance literature so far, few studies are relevant [22-24], and only one collects data at hospital [2]. Most of the studies agreed that no show is correlated with PT in individual therapy, yet the findings on the relationship between cancellation and PT across research had been mixed. In general, no show has stronger effect on PT than cancellation does [22-24]. Among those, the most comprehensive study examined four attendance variables (no show, cancellation, showing up at an unscheduled time, or being late) and showed that all variables are correlated with therapy PT and those variables at the first session can explain all variance of ultimate PT [2].

By now, no study has explored whether patients' handling styles of each session (e.g. being present or absent, or being absent and inform/not inform the therapists in advance) signify their handling styles of therapeutic relationship as a whole (e.g., complete or prematurely terminate the treatments, or decide to end the treatments and inform/not inform the therapists in advance). Besides, as for other subtler attendance behaviors relating to the temporal regulations, such as punctuality, lateness, time changes, and between-session contacts, though they are clearly observable and easily collected in routine psychotherapy practice, no study so far has explored the relationships between these subtler attendance behaviors and PT.

Study objectives of the study

In this study, we intended to focus on patients' observable and concrete attendance behaviors, with objectives to answer the following questions:

- What are the differences in the attendance behaviors among psychotherapy completers, informing, and non-informing PTs?
- Are those attendance behaviors different in the three groups, and what are effective predictors of termination conditions?

- What is the total predicting power of those effective attendance variables on termination conditions?

Methods

Data source

In this study, we used an archival method. The archives were retrieved from the therapy process note database established by a male psychodynamically oriented therapist who was working as a clinical psychologist in the adult outpatient division of a psychiatric center in Taiwan and aged in his 30s at the time of data building from October 1999 to January 2005. The therapist was about to start his 6th-year career in 1999 and had been taking psychoanalytic psychotherapy training and under supervision during the data-building period of time.

This database was the only accessible and longitudinal local psychotherapy dataset at the hospital to provide relatively detailed clinical material for this study. The therapy fees were fully covered through the Taiwan National Health Insurance system, so the patients were almost free of charge. During the above period of time, the therapy division had five therapists, who took therapy cases in turns according to the patients' referral time. Therefore, patients were somewhat randomly assigned to the therapists. But the therapy records of the other four psychotherapists were too rough to be used for research. Being the approved by the institutional review board of Taipei City Hospital, this study was exempt from obtaining patients' informed consents (study protocol number = TCHIRB-10504112-E, and date of approval = July 26, 2016).

Study population

Since this study was intended to study for short-term psychotherapy, excluded from the study were patients who were referred for muscle relaxation or biofeedback, did not enter into the treatment stage, were forced to terminate therapy because of clear external variables, such as therapist's overseas visit, or engaged in long-term therapy lasting > 20 sessions. Finally, we chose 97 patients from 165 patient referral pool for the study, with scheduled 982 sessions totally.

The majority of the variables (including education, marital status, family status, occupational ranking, employment status, whether combined medication, major categories of psychiatric diagnosis, emergency visit and hospitalization experiences, and

waiting time) are not different among three groups of patients (see next section for definitions), except noninforming PTs tended to be male ($\chi^2 = 9.55$, degree of freedom = 1, $p < 0.01$), younger ($F = 3.99$, DF = 2, 92, $p < 0.05$), and not having previous therapy experience ($\chi^2 = 9.60$, DF = 2, $p < 0.01$), comparing to completers or informing PTs [25].

Procedures and variables

The framework of short-term individual therapy is followed the time-limited psychodynamic therapy conception [26-28] and is further adjusted according to the benefit package of Taiwan National Health Insurance, i.e., weekly therapy. A complete treatment protocol comprised evaluation and treatment stages, which were limited to 4 (mostly lees than 2) and 12 sessions, respectively. Most patients who had attended evaluation-stage sessions were generally accepted to enter the treatment stage, unless they showed an obvious lack of intention to continue treatment or their mental conditions were clearly unstable. Because of limited therapy resources, the therapist scheduled treatment-stage sessions 4 by 4 with patients' agreement. The institution automatically terminates the therapeutic relationship of those patients who failed to attend two consecutive sessions or two nonconsecutive sessions without providing a proper reason [1]. A latest study indicated that 12–14 therapy sessions are needed to make patients achieve 50% continuous and meaningful outcome change [29]. Therefore, the treatment protocol of this study is roughly conformed to empirical findings.

This study adopted the independent between-group comparison design. Patients were divided into three groups: completers, informing PTs, and noninforming PTs, on the basis of their styles of therapy termination. Completers refer to patients who completed the evaluation stage and entered the treatment stage, scheduled 12 treatment-stage sessions, and attended the last treatment-stage session. Therapy PTs refer to patients who entered the treatment stage, but did not schedule up to 12 treatment-stage sessions, or scheduled 12 treatment-stage sessions, but did not attend the last session. Informing PT, or informers, refers to patients who prematurely terminated therapeutic relationship with informing in advance their therapist of their intention to end the treatment before the last treatment-stage session. On contrary, noninforming PTs,

Table 1. Definitions of main attendance variables

Variable	Definition
Punctuality	Patients arrive on time or being late for < five min[§].
Cancellation	Patients cancel arranged sessions without rescheduling appointments.
No show	Patients are absent from sessions without informing the therapists beforehand.
Session time change	Patients attempt to change the time of a scheduled session.
Early leave	Patients leave sessions at least five min earlier than scheduled.
Delayed leave	Patients leave sessions at least five min later than scheduled.
Between-session contact	Patients make additional but unnecessary contact with psychotherapist outside of treatment time.

[§]Due to the possible time delay created by reception staff who could not call on therapist immediately

or noninformers, refers to patients without informing their therapist in advance of their termination intention and failed to attend a scheduled session without rescheduling or attending any future appointments [8].

Attendance behaviors consisted of seven variables for unusual attendance, namely, punctuality, cancellation, no show, session time change, early leave, delayed leave, and between-session contact. Table 1 shows the definitions of those terms. Other three derived attendance variables included in the analysis were attendance rates in the evaluation stage, treatment stage, and overall treatment.

Before data analysis, patients' termination conditions were firstly coded by a search assistant according to the therapy files and were later verified by another assistant to ensure correct coding. If any doubt existed, the assistants raised coding questions to the main researcher before making decision. The Cohen's Kappa of interrater reliability is 0.92 ($p < 0.001$) for termination conditions. Subsequently, the differences of those three patient groups in attendance variables were coded. Finally, 4 of 7 variables reached perfect interrater agreement (including punctuality, cancellation, no show, and early leave), except between-session contact ($K = 0.69$, $p < 0.001$), session time change ($K = 0.98$, $p < 0.001$), and delayed leave ($K = 0.96$, $p < 0.001$).

Statistical analysis

Since each patient varied in the number of scheduled sessions, this factor affected the probability of unusual attendance behaviors. Theoretically, patients who scheduled more therapy sessions were likely to show more unusual attendance behaviors. Therefore, before further statistical analysis, the original frequencies of unusual attendance variables were converted to proportional scores (divided by scheduled session times) to avoid distorted results.

We used two-tailed analysis of variance to analyze the differences in attendance variables of three patient groups and Bonferroni correction method to compare for *post hoc* multiple group. Then, attendance variables achieving significant between-group differences and termination conditions were adopted as predictors and criterion variables, respectively, in backward stepwise multinomial logistic regression analysis to determine the prediction power of effective predictors on termination conditions.

In this study, we used International Business Machine Statistical Package for Social Science for Windows, version 19.0 (IBM Corp, Armonk, New York, USA) for the following two-step data analysis. The differences between the groups were considered significant if $p < 0.05$.

Table 2. Analysis of variance of attendance variables of patients with different therapy termination conditions

	Mean ± SD (95% CI)			*F*
	Completers (*n* = 32)	Informers (*n* = 36)	Noninformers (*n* = 29)	
Punctuality (times)§	11.19 ± 3.13 (10.06 - 12.31)	5.36 ± 3.23 (4.27 - 6.45)	5.34 ± 3.30 (4.09 - 6.60)	35.30***
Cancellation (times)§	0.56 ± 0.95 (0.22 - 0.90)	0.92 ± 1.03 (0.53 - 1.24)	0.69 ± 0.89 (0.35 - 1.03)	1.19
No show (times)§	0.19 ± 0.60 (−0.03 - 0.40)	0.28 ± 0.57 (0.09 - 0.47)	1.52 ± 0.88 (1.19 - 1.85)	34.64†,***
Time change (times)§	0.19 ± 0.40 (0.04 - 0.33)	0.31 ± 0.67 (0.08 - 0.53)	0.28 ± 0.65 (0.03 - 0.52)	0.36
Early leave (times)§	0	0	0.03 ± 0.19 (−0.04 - 0.11)	1.18
Delayed leave (times)§	0.22 ± 0.55 (0.02 - 0.42)	0.36 ± 1.11 (−0.01 - 0.73)	0.14 ± 0.44 (−0.03 - 0.31)	0.69
Between-session contact (times)§	0.13 ± 0.42 (−0.03 - 0.28)	0.17 ± 0.85 (−0.12 - 0.45)	0.14 ± 0.52 (−0.06 - 0.33)	0.04
Evaluation-stage sessions scheduled§	1.38 ± 0.75 (1.10 - 1.65)	1.68 ± 1.01 (1.35 - 2.04)	1.69 ± 1.11 (1.23 - 2.08)	1.06
Treatment-stage sessions scheduled§	12.53 ± 1.63 (11.94 - 13.12)	6.39 ± 3.27 (5.28 - 7.50)	6.83 ± 2.93 (5.71 - 7.94)	52.46†,***
Overall sessions scheduled§	13.91 ± 1.86 (13.24 - 14.58)	8.08 ± 3.50 (6.90 - 9.27)	8.48 ± 3.31 (7.22 - 9.74)	38.74†,***
Evaluation-stage sessions attended§	1.31 ± 0.59 (1.10 - 1.53)	1.56 ± 0.74 (1.31 - 1.80)	1.55 ± 0.91 (1.21 - 1.90)	1.11
Treatment-stage sessions attended§	11.8 ± 0.97 (14.46 - 12.16)	5.28 ± 2.97 (4.27 - 6.28)	4.79 ± 3.06 (3.63 - 5.96)	76.89†,***
Overall sessions attended§	13.13 ± 1.07 (12.74 - 15.51)	6.83 ± 3.03 (5.81 - 7.86)	6.34 ± 3.22 (5.12 - 7.57)	66.08†,***
Punctuality rate	0.82 ± 0.24 (0.07 - 1.00)	0.64 ± 0.28 (0.00 - 1.00)	0.62 ± 0.23 (0.00 - 0.86)	6.04**
Cancellation rate	0.04 ± 0.06 (0.00 - 0.18)	0.13 ± 0.15 (0.00 - 0.50)	0.09 ± 0.11 (0.00 - 0.33)	5.62†,**
No-show rate	0.01 ± 0.04 (0.00 - 0.17)	0.03 ± 0.06 (0.00 - 0.25)	0.19 ± 0.14 (0.00 - 0.50)	38.09†,***
Time change rate	0.01 ± 0.03 (0.00 - 0.08)	0.04 ± 0.08 (0.00 - 0.25)	0.03 ± 0.06 (0.00 - 0.33)	1.24†
Early leave rate	0.00 ± 0.00 (0.00 - 0.00)	0.00 ± 0.00 (0.00 - 0.00)	0.00 ±0.02 (0.00 - 0.11)	1.18
Delayed leave rate	0.02 ± 0.04 (0.00 - 0.13)	0.03 ± 0.08 (0.00 - 0.33)	0.01 ± 0.04 (0.00 - 0.17)	1.29†
Between-session contact rate	0.01 ± 0.03 (0.00 - 0.14)	0.01 ± 0.08 (0.00 - 0.45)	0.02 ± 0.06 (0.00 - 0.25)	0.11
Evaluation-stage attendance rate	0.98 ± 0.07 (0.67 - 1.00)	0.96 ± 0.12 (0.50 - 1.00)	0.97 ± 0.08 (0.67 - 1.00)	0.41
Treatment-stage attendance rate	0.95 ± 0.08 (0.75 - 1.00)	0.79 ± 0.25 (0.00 - 1.00)	0.65 ± 0.23 (0.00 - 1.00)	17.07†,***
Overall attendance rate	0.95 ± 0.07 (0.76 - 1.00)	0.84 ± 0.17 (0.50 - 1.00)	0.73 ± 0.18 (0.25 - 1.00)	18.40†,***

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$
†Significantly different using analysis of variance or Brown-Forsythe test when appropriate
§Raw score
CI, confidence interval; SD, standard deviation

Table 3. *Post hoc* comparisons of significant attendance variables

	Mean		
	Completers-informers	Completers-noninformers	Informers-noninformers
Punctuality	0.180*	0.204**	0.025
Cancellation	−0.090**	−0.053	0.037
No-show	−0.016	−0.181***	−0.164***
Treatment stage attendance	0.163**	0.296***	0.133
Overall attendance	0.115**	0.227***	0.112*

*$p < 0.05$, **$p < 0.01$, **$p < 0.001$, significantly different using Bonferroni correction method

Table 4. Parameter estimations of regression model

Termination condition	B	SE	Wald	DF	Exp (B)
Completers[†]					
Intercept	2.03	0.53	14.95	1	
Cancellation rate	−5.06	3.84	1.74	1	0.006
No-show rate	−23.74	5.93	16.04***	1	4.878E-11
Informer[†]					
Intercept	1.47	0.53	7.73	1	
Cancellation rate	2.67	3.11	0.74	1	14.493
No-show rate	−17.14	4.08	17.64***	1	3.614E-8
Informer[§]					
Intercept	−0.56	0.32	3.03	1	
Cancellation rate	7.74	2.92	7.00**	1	2287.667
No-show rate	6.61	5.83	1.28	1	741.006

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$;
[†]Reference group = Noninformer;
[§]Reference group = Completers.
McFadden R^2 of the model = 0.298.
B, beta; DF, degree of freedom; SE, standard error; Exp (B), odds ratio

Results

The ratio of completers, informers, and noninformers were 34%, 36.1%, 29.9%, respectively ($\chi^2 = 0.58$, DF = 2, $p = 0.75$). Table 2 shows the comparison results of unusual attendance behaviors. Table 3 lists *post hoc* multiple comparisons on the significant variables. Three groups of patients exhibited different treatment engagement levels; completers had the highest level of engagement, followed by informers and then noninformers. Table 4 summarizes parameter estimations of the regression model.

Regression analysis showed that the rates of no show and cancellation could effectively predict the termination conditions ($\chi^2 = 63.37$, DF = 4, $p < 0.001$), but the rate of punctuality was excluded from the regression model ($\chi^2 = 1.22$, DF = 2, $P = 0.54$). This model yielded an overall correct estimation rate of 67%, an excellent rate. The correct estimation rates of this model for completers, informers, and noninformers were 75.0%, 52.8%, and 75.9%, respectively.

Discussion

Attendance rate

Attendance rate is an integrated score. Its denominator is the number of scheduled sessions, which reflects patients' aspiration for the future therapeutic relationship. Its numerator was the number of sessions that patients actually attended, namely, the scheduled number of sessions minus incidences of cancellation and no show. Therefore, the attendance rate related with both the cancellation and no-show rates. The results of this study suggest that the overall attendance rate could satisfactorily distinguish three types of terminations (Table 2). This means patients' intention to schedule future therapy sessions and their actual attendance behaviors, particularly cancellations and no shows, were closely related to ultimate termination conditions.

In this study, a complete treatment protocol comprised the evaluation and treatment stages. The evaluation-stage attendance rate was not good for distinguishing patient groups (Table 2). This finding is inconsistent with that in other study [2]. There are two possible reasons to explain: First, different sampling, because the present study excluded patients who did not enter the treatment stage. Second, old research explored the relationships between the attendance behaviors of each individual therapy session and PT, whereas the present study was to analyze the relationships between the evaluation-stage attendance behaviors and informing and noninforming PTs.

The treatment-stage attendance rate can distinguish between completers and informers as well as between completers and noninformers. But this rate in this study was nonsignificant in distinguishing between informers and

noninformers (Table 2). Both treatment-stage attendance rate and overall attendance rate were *post hoc* variables that could not be determined until specific stages of therapy were completed; they therefore lacked prospective implications for clinical practice. If therapists pay careful attention to patients' attendance behaviors at each session, they would find punctuality, cancellation, and no show, reflecting patients' compliance with therapy more effectively.

Punctuality

Punctuality rate was not included in the final regression model because of its significant correlations with cancellation and no-show rates. It could be useful to distinguish completers from informers or noninformers (Table 3). Punctuality was therefore an identifying characteristic of completers. Not attending the sessions punctually shortens the time available for talk at each session, affecting the extent to which the topics could be explored, some of the valuable session time was instead allocated to discuss about the patient's lateness, and at last compromised the treatment efficacy.

No show

In congruence with literature to some degree [2, 22-24], this study found that the no-show rate could distinguish between completers and noninformer as well as between informers and noninformers, and the distinctions were particularly apparent (Table 3). No show was therefore an identifying characteristic of noninformers. Whereas unpunctual attendance merely leads to wasting part of the session time, no show wastes the entire session. Because the patients in this study did not need to pay for treatment, no-show patients took precious medical resources without using them and deprived other patients who were genuinely in need of psychotherapy. No show not only exerts substantial negative impact on therapists and therapeutic relationships; the negative effects could even spread to other patients or treatment institutions.

As shown in Table 4, in comparison with the possibility of noninforming PTs, one unit increase in no-show rate (namely 100% of rate increase) rendered the completion rate 4.878/1011 times that of the original rate. In addition, in comparison with the probability of noninforming PT, one unit increase in no-show rate also rendered the informing PT rate 3.614/108 times that of the original rate. Patients' each no-show incidence hugely reduced the odds ratios of completion and informing PT over noninforming PT.

Cancellation

Cancellation rate could only be used to distinguish completers from informers, and the distinction was fairly apparent (Table 3). Completers usually tried to be punctual and restrained themselves from cancelling scheduled sessions, since punctuality was negatively correlated with cancellation. Similar to informers, noninformers sometimes cancelled sessions, but their cancellation tendencies were less clear, probably because they had a stronger inclination to no show. Therefore, cancellations were a specific, more common method for informers to respond to internal and relational difficulties, with which they could still maintain contact and communications with therapists to a certain extent. Although cancelling sessions also led to treatment interruption, comparing with noninformers, informers were relatively restrained about submitting to the no show impulse, thereby limiting the level and scope of negative influences.

The past few studies reached inconsistent conclusions regarding the relationship between cancellations and PTs. If the data of the two subtypes of PTs in this study were combined, the statistical power of the significant variables even increases, confirming that cancellations and no shows were correlated with PT [2, 23]. Hence, whether the inconsistence of past findings about cancellation could be partly attributed to the differences characteristics of PT subtypes warrants further exploration.

As shown in Table 4, in comparison to the probability of treatment completion, patients' probability of informing PT increased substantially to 2287.67 times that of the original with per one unit increase in cancellation rate (namely 100% of rate increase). Given the overall mean number of scheduled sessions of PTs in this study was about 8, the patients' probability of informing PT increased around 286 times (2287.67/8) when patients cancelled each appointment. Like no show, each cancellation incidence is a strong warning sign for PT.

Although the previous three attendance behaviors all correlate with treatment compliance with temporal structure, they belong to two different dimensions of treatment conventions: being on time and calling off. Punctuality is related to the on-time dimension, whereas cancellations and no shows belong to the calling-off dimension. Furthermore, cancellations and no shows concern whether patients prefer to inform the therapist in advance if they do not attend sessions, whereas punctuality focuses on whether patients abide by the scheduled appointment time if they do attend treatment sessions. The differences among the three groups of patient lie in the varying levels of compliance or resistance they exhibited toward on-time and calling-off therapy norms that constitute treatment compliance.

Regression analysis results showed that the correct prediction rates of no show and cancellation for informers were lower than other two patient groups (Table 4). Hence, to identify informers, other conversational or nonverbal clues in the therapeutic process might have additional values. Further investigation can determine whether this type of patients tends to adopt repressive or other defensive strategies to manage their difficulties, so that their noncompliance is relatively less observable from their behaviors.

Study limitations

This study has five limitations; the readers are warned not to overinterpret the study results:
- Because all patients were sampled from a psychiatric specialty hospital, their disease can be severer or more chronic than psychiatric patients from general hospitals.

- Since all patients were treated by the same psychotherapist, the sampling range was not sufficiently wide, and the individual characteristics and treatment methods of this therapist could affect the treatment outcomes and limit the external validity of the study.
- The time period of data collection was relatively long time ago; it might prevent the results from fully reflecting the clinical status quo. Even literature indicated that therapy databases have been continually used as research sources up 20 years after being archived [30-32], newer archives are still optimal for research.
- The definition of cancellation or no show and the definition of informers or noninformers overlapped to some extent in terms of last scheduled session; this factor compromised the effect size of discriminating or predicting power in this study.
- All variables in this study were analyzed according to the total frequencies during the whole therapy course. It is unclear if those behaviors happened at different stages of therapy, especially at early stage, would show different discriminating or predicting power, or have different latent meaning. Further exploration would clarify this question.

Implications

First, this study explored the concrete and observable attendance behaviors and their relationships with premature termination which is a new study in literature. Since all therapists could easily collect the information in routine clinical practice, these variables could serve as convenient and useful indicators reflecting the extents of patients' therapeutic compliance and alliance. Besides, this study's coverage of attendance behaviors is also the most comprehensive in literature.

Second, this study adopted a detailed process note database exceeding 5 years and included 982 sessions, which has been a relatively uncommon method of data collection in studies on psychotherapy PT. Though files from work units and therapists' case journals have rarely been applied in psychotherapy and counseling studies, McLeod [33] considered this information can be appropriately used by researchers (pages 248-9). Some researchers have found that the research conclusions obtained from detailed process notes were similar to those derived from verbatim transcripts; the correlation coefficient between the two is 0.86 and 0.90 [34].

Third, this study is the second to have explored the differences between informing and noninforming PTs in therapy. Its results verified that classifying patients into three groups according to termination conditions, rather than simply dividing the patients into PTs and completers, is logical and necessary for research, theories, and practices.

Fourth, this study described the latent dynamics of therapeutic relationship manifested in various attendance behaviors, benefiting therapists to infer patients' possible PT inclinations quickly and intervene precisely according to individual regulation lacking of punctuality or offering prior notice.

Summary

Therapy PTs are not simply a homogenous group in contrast with completers. They can be further divided into informing and noninforming PTs depending on having previous notice or not before PT. The temporal structure of therapy is of paramount value in detecting PT intention. Patients' compliance with temporal regulations can be inferred from their various attendance behaviors in therapy process. Unlike other abstract concepts, attendance behaviors are concrete information that therapists can easily collect in routine clinical practice. Specifically, punctuality, cancellations, and no shows are the identifying features of completers, informing, and noninforming PTs, respectively. Overall, cancellations and no shows can correctly predict two-thirds of patients' termination conditions.

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Conflicts of Interest

The authors declare no potential conflicts of interest in writing this report.

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