

Premature Discontinuation in Adult Psychotherapy: A Meta-Analysis

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Objective: Premature discontinuation from therapy is a widespread problem that impedes the delivery of otherwise effective psychological interventions. The most recent comprehensive review found an average dropout rate of 47% across 125 studies (Wierzbicki & Pekarik, 1993); however, given a number of changes in the field over the past 2 decades, an updated meta-analysis is needed to examine the current phenomenon of therapy dropout. **Method:** A series of meta-analyses and meta-regressions were conducted in order to identify the rate at which treatment dropout occurs and predictors of its occurrence. This review included 669 studies representing 83,834 clients. **Results:** Averaging across studies using a random effects model, the weighted dropout rate was 19.7%, 95% CI [18.7%, 20.7%]. Further analyses, also using random effects models, indicated that the overall dropout rate was moderated by client diagnosis and age, provider experience level, setting for the intervention, definition of dropout, type of study (efficacy vs. effectiveness), and other design variables. Dropout was not moderated by orientation of therapy, whether treatment was provided in an individual or group format, and a number of client demographic variables. **Conclusions:** Although premature discontinuation is occurring at a lower rate than what was estimated 20 years ago (Wierzbicki & Pekarik, 1993), it is still a significant problem, with about 1 in every 5 clients dropping out of therapy. Special efforts should be made to decrease premature discontinuation, particularly with clients who are younger, have a personality or eating disorder diagnosis, and are seen by trainee clinicians.

Keywords: attrition, dropout, meta-analysis, premature termination, psychological interventions

Premature discontinuation or therapy dropout has been described by many as a significant problem that limits the effectiveness of the interventions that are offered to individuals who suffer from mental and behavioral health problems (Barrett, Chua, Crits-Christoph, Gibbons, & Thompson, 2008; Garfield, 1994; Hatchett & Park, 2003; Reis & Brown, 1999; Swift, Callahan, & Levine, 2009; Wierzbicki & Pekarik, 1993). Premature discontinuation in psychotherapy has been shown to negatively impact clients, therapists, health care agencies, and society. Clients who prematurely terminate have been found to exhibit poorer treatment outcomes (Cahill et al., 2003; Klein, Stone, Hicks, & Pritchard, 2003; Lampropoulos, 2010; Pekarik, 1992) and to be generally more dissatisfied with treatment (Björk, Björck, Clinton, Sohlberg, & Norring, 2009; Kokotovic & Tracey, 1987; Lebow, 1982). In addition, when clients drop out of therapy, their service providers experience a loss of revenue and an underutilization of their time, and have been found to sometimes experience a sense of failure or demoralization due to the perception of being rejected by the client

(Barrett et al., 2008; Klein et al., 2003; Pekarik, 1985a; Reis & Brown, 1999; Sledge, Moras, Hartley, & Levine, 1990). Therapy dropouts can also have a larger impact on agencies by limiting the number of people that can be served in an agency and by being more likely to start and stop treatment on multiple occasions at various sites (Carpenter, Del Gaudio, & Morrow, 1979; Reis & Brown, 1999). The negative impacts of premature discontinuation also extend to the larger society due to the increased burden of mental illness as a result of the continued impairment that is experienced by the dropout (Barrett et al., 2008). Given the deleterious effects of premature discontinuation, it is important that we gain a better understanding of this frequently occurring negative therapy event.

What Is Premature Discontinuation in Therapy?

Premature discontinuation in therapy can be defined as occurring when a client starts an intervention but discontinues prior to recovering from the problems (symptoms, functional impairment, distress, etc.) that led him or her to seek treatment (Garfield, 1994; Hatchett & Park, 2003; Swift et al., 2009). Implicit in this definition is the idea that the client has stopped the intervention without meeting the therapeutic goals or without gaining the full benefits that would have been available if the client had continued to attend and been fully invested in the sessions. Also implicit is the idea that the client has discontinued therapy prior to completing the full course of the intervention. Premature discontinuation occurs unilaterally by the client, rather than through a mutual agreement between the therapist and client to end treatment. Dropping out of therapy can be contrasted to both completing and rejecting therapy (Garfield, 1994). While dropping out implies that therapy has been

This article was published Online First April 16, 2012.

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We express our appreciation to Rachel Bennett, Nina Kominiak, Mari-ana Ivanovic, and Tracy Stewart for their help in compiling the reference list for studies that were included in the meta-analysis and for cross-coding a subset of studies for the reliability check.

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started and then discontinued early, completing therapy implies a resolution of the activity, and rejecting therapy occurs when a client fails to start or show up for the initial therapy appointment.

While most would agree that the definition of dropout implies premature discontinuation of the therapeutic intervention, there is a significant amount of variation in the methods used to operationalize the construct (Garfield, 1994; Hatchett & Park, 2003; Swift et al., 2009; Wierzbicki & Pekarik, 1993). One popular method for operationalizing therapy dropout is to consider all clients who attend less than a specified number of sessions as premature terminators. This operationalization is based on the idea that a minimum number of sessions are required for clients to show improvement in therapy, and support for this idea is illustrated in the dose–effect literature (Lambert, 2007). A second method for operationalizing dropout is based on failure to complete a treatment protocol. According to this method, any client who fails to complete a full treatment protocol is considered to have dropped out. This method logically fits with the dropout definition of discontinuing prior to completing a full course of therapy. Another operationalization of dropout is based on missed appointments. Using this method, any client who fails to attend a scheduled session without rescheduling or attending any future appointments is considered a premature terminator. Fourth, dropout can be operationalized through therapist judgment. With this method, after a client has discontinued therapy, the therapist makes a decision as to whether or not the client has prematurely terminated. A fifth classification system for dropout based on clinically significant change has more recently been introduced by Hatchett and Park (2003). According to this operationalization, clients are determined to be premature terminators if they discontinue therapy prior to evidencing a reliable improvement and prior to obtaining a score within the normal range on an outcome measure. This method fits with the dropout definition of discontinuing therapy prior to recovering from the problems and impairment that led to seeking treatment.

Advantages and disadvantages can be found with each of these classification systems. While duration and completion-based methods are easily calculated, they are subject to interpretation concerning the appropriate length of treatment. They also have the potential to misclassify clients who recover after only a few sessions and those who make no progress even after attending many sessions. Therapist judgment has historically been considered the preferable classification (Pekarik, 1985b), but this method depends on clinical judgment that can be biased and flawed (Garb, 2005; Grove, Zald, Lebow, Snitz, & Nelson, 2000). Although the clinically significant change method still incorporates a degree of clinical judgment in defining the construct of clinically significant change, this method more objectively operationalizes dropout compared to the other methods. However, some would argue that the clinically significant change method misses some of the nuances of therapy that are better noticed by the therapist and client.

Past Reviews of Premature Discontinuation

Given the many contrasting methods that have been used to operationalize the construct of premature discontinuation in therapy, individual studies examining this event often find diverse results. In an effort to make sense of the diverse results, a handful of reviews have been conducted with the goal of identifying and

examining the rate at which premature discontinuation occurs and the variables related to its occurrence. In one of the earliest reviews of the topic, Baekeland and Lundwall (1975) examined the phenomenon of premature discontinuation (defined in their review primarily by the number of sessions attended) across a number of medical and psychiatric treatments. For adult psychotherapy, Baekeland and Lundwall indicated that the dropout rate ranges anywhere from 31% to 79%. From their review, they concluded that clients were more likely to drop out if they were younger, were female, were less educated, had an ethnic minority background, and/or had a lower socioeconomic status (SES). They further reported that male therapists, providers who were less experienced, and those who were more ethnocentric were all more likely to lose their clients to attrition.

Almost 2 decades later, Garfield (1994) conducted an updated review of premature discontinuation in therapy. After pointing out the existence of many different operationalizations for the construct, Garfield suggested that a dropout can be defined as a client who starts therapy (has at least one session) and then discontinues on his or her own without mutual agreement with the therapist. Then, in discussing the findings related to dropping out of therapy, Garfield indicated that the median length of stay in treatment is between five and six sessions. This can be seen as problematic, given that the dose–effect literature indicates that around 18 sessions are needed for 50% of clients to recover in terms of clinically significant change on an objective measure (Lambert, 2007). In further exploring continuation in therapy, Garfield concluded that there may be some relationship between premature discontinuation and lower SES, lower education level, and minority ethnic status, but no clear relationship with age, gender, or diagnosis.

Other more recent reviews of premature discontinuation have also examined how it is related to the demographic variables of the client. In a 1999 review, Reis and Brown concluded that lower client SES and minority ethnicity were the only consistent demographic predictors of dropping out of therapy. In probably the most recent general review of early withdrawal from mental health treatments, Barrett et al. (2008) indicated that younger, less educated, minority clients with a lower SES may be more likely to drop out. However, both Reis and Brown and Barrett et al. were tentative in their conclusions and instead emphasized the inconsistent findings linking client demographic variables to premature discontinuation from therapy. Results from all of these previous reviews illustrate the mixed and inconsistent findings concerning predictors of premature discontinuation, particularly for client demographic variables.

Wierzbicki and Pekarik's (1993) Meta-Analysis

One problem with these previous examinations of the topic of premature discontinuation from psychotherapy is the lack of statistical and methodological rigor. The only systematic and comprehensive statistical review of the general psychotherapy dropout literature that we are aware of was conducted by Wierzbicki and Pekarik (1993). In their meta-analysis, Wierzbicki and Pekarik reviewed dropout rates from 125 different studies dating up to June of 1990. These included studies that were published in English, that reported a psychotherapy dropout rate, that included actual therapy clients and not therapy analogues, and that were not limited exclusively to clients with drug or alcohol problems.

Averaging across studies, in their meta-analysis they found a mean dropout rate of 46.86% ($SD = 22.25$), 95% CI [42.9%, 50.82%]. Wierzbicki and Pekarik (1993) found that this overall dropout rate differed depending on the definition that was used; lower rates were reported for studies that defined dropout based on failure to attend a scheduled session, compared to studies that operationalized dropout based on therapist judgment or on attending a minimum number of sessions. In contrast, dropout rates did not differ by treatment mode (individual, group), treatment setting (university, private clinic, public clinic, other), type of client (adult, mixed, children), or type of therapist (age, ethnicity, type of degree, or years of experience). Wierzbicki and Pekarik also conducted two sets of analyses examining the relationship between six client demographic variables and dropping out. Study dropout rates were not related to any of the study level client demographic variables (% male, % White, average age, average years of education, average SES rating, % married) when tested using correlations. However, when examining mean differences between dropouts and completers with a subset of studies that included this type of data, Wierzbicki and Pekarik found significant effect sizes for ethnicity (dropouts were more likely to have a minority ethnic status), education (dropouts on average had less education), and SES (dropouts on average had a lower SES rating). Significant effects were not found for gender, age, or marital status. Last, Wierzbicki and Pekarik ran a series of analyses of variance (ANOVAs) examining differences between dropouts and completers in demographic variables across the levels of the categorical study variables. They reported that there were no significant differences in effect sizes based on demographics between levels of the categorical variables of definition, treatment mode, or setting.

Need for Updated Meta-Analysis

Although Wierzbicki and Pekarik's (1993) review furthered the field's understanding of the occurrence of psychotherapy dropout, it was conducted almost 2 decades ago, and thus the results may not accurately represent current findings of premature discontinuation in therapy. Three major changes have occurred in the field since Wierzbicki and Pekarik conducted their original review, each of which may date their results. First, some changes have occurred in the way that treatments are provided. Some of these changes include an increased number of providers, managed care, acceptance of mental health and psychological treatment options as equal to physical health, a continued emphasis on treating clients in the least restrictive or intensive environment, offering services in locations and through formats that are accessible to a greater number of clients, increasing the services that are covered and offered to low income clients, and the strong emphasis that is now placed on using well-defined, brief, time-limited interventions (DeLeon, Kenkel, Garcia-Shelton, & VandenBos, 2011). These changes in the make-up of interventions and the way that they are provided may have had an influence on therapy dropout.

Second, Wierzbicki and Pekarik's (1993) results may be dated because of changes in the practice of reporting dropout rates. In contrast to much of the time period covered by the original review, reporting of dropout rates has now become standard practice for treatment outcome studies. Given that in the past, reporting of dropout rates was not standard, it is possible that previous studies

only reported dropout rates when the study was specifically designed to examine dropout or when dropout was a significant or noteworthy problem. A number of treatment outcome studies may not have reported dropout rates because rates were low, because rates were unusually high and the clinician or researcher invested in the treatment did not want disclose that fact, or because reporting the rates did not seem relevant to the clinician or researcher. Reporting of dropout rates is now standard for all outcome studies (American Psychological Association Publications and Communications Board Working Group on Journal Article Reporting Standards, 2008). Reviewing results from the greater number and percentage of studies that now report dropout rates may give us a clearer and more accurate picture of premature discontinuation across the field.

Third, Wierzbicki and Pekarik's (1993) results may be dated due to advancements that have been made in the data-analytic techniques for meta-analyses. For the overall dropout rate, Wierzbicki and Pekarik simply averaged the rates reported by the 125 different studies. Additionally, when examining moderators, Wierzbicki and Pekarik conducted simple ANOVAs and correlations. According to today's standards, these strategies are seen as flawed because they do not assign weights for studies or follow the appropriate rules for assigning degrees of freedom (Borenstein, Hedges, Higgins, & Rothstein, 2009). Current strategies and programs are available that allow the calculation of weighted averages, allow more appropriate testing for moderators, and allow the use of meta-regression instead of simple correlations.

Given the changes that have occurred in the field over the past 2 decades and the number of studies that have reported and examined dropout rates during this time period, we felt that an updated meta-analysis of psychotherapy dropout was needed. Since Wierzbicki and Pekarik's (1993) meta-analysis was published, other systematic reviews and meta-analyses of psychotherapy dropout with specific populations have been conducted. For example, McMurrin, Huband, and Overton (2010) recently conducted a systematic review of non-completion in personality disorder treatments. Across 25 empirical studies, they found a median non-completion rate of 37%. They further found evidence for differences in completion rates depending on a number of client variables such as age, level of education, employment status, and severity, as well as treatment duration and setting. In a recent meta-analytic review, Olver, Stockdale, and Wormith (2011) found an overall dropout rate of 27.1% in 114 studies examining offender treatment attrition. Their attrition rate was predicted by offender age, ethnicity, marital status, employment status, and level of education. In another recent meta-analysis that included 11 studies from the psychotherapy dropout literature, Sharf, Primavera, and Diener (2010) found a significant relationship between the strength of the therapeutic alliance and premature discontinuation; weaker alliance was associated with an increased likelihood of dropping out. Still, other meta-analyses, although not specifically focused on premature discontinuation in therapy, have also included a report of dropout rates in their results. For example, Cuijpers, van Straten, Andersson, and van Oppen (2008) found that for depressed adult clients, dropout rates significantly differed between treatment orientation, with the highest rates being observed in cognitive-behavioral interventions. In another meta-analysis, Swift, Callahan, and Vollmer (2011) found that clients who received a preferred intervention were significantly less likely

to discontinue treatment prematurely. Rather than reporting overall dropout rates, these last three meta-analyses focused only on examining whether or not a significant relationship between dropout and their variables of interest existed.

These recent reviews have focused on examining psychotherapy dropout for specific client populations (e.g., those with personality disorders, offenders, those with depression) and specific treatments (e.g., cognitive-behavioral therapy [CBT], behavior therapy), or they examined the effect of one or two specific variables (e.g., treatment preferences, therapeutic alliance). Although these more focused reviews comprehensively examined dropout in their specified domains, a to-date wider-ranging meta-analysis of adult psychotherapy dropout is needed in order to both provide an overall estimate of dropout for the current practice of psychotherapy. This overall estimate could not only serve as a broad evaluation for psychotherapy in general but could also serve as a dropout benchmark for studies in areas where more focused estimates have yet to be provided. Additionally, a broader review allows for comparisons in dropout rates between settings, disorders, treatments, and populations. An updated comprehensive understanding of premature discontinuation is an important step in efforts to decrease the occurrence of therapy dropout and to improve the effectiveness of psychological interventions.

Method

Literature Search Procedure

The goal of this meta-analysis was to conduct an updated and comprehensive review of psychotherapy dropout for adult clients. Given that Wierzbicki and Pekarik (1993) reviewed studies through June 1990, our review of the literature only covered articles published from July 1990 to June 2010. Specifically, studies were included if they (1) reported a dropout rate, (2) were published in English, and (3) included actual clients who started a psychological or psychosocial intervention and not therapy analogues. Studies were excluded if they (4) were limited exclusively to drug or alcohol clients and (5) were unpublished reports (i.e., unpublished dissertations and papers presented at meetings). These inclusion/exclusion criteria were adopted to match the criteria used by Wierzbicki and Pekarik in their original meta-analysis. In addition, in order to increase the homogeneity of the sample, we also only included studies of (6) adult clients, and we excluded studies that (7) were limited entirely to clients being seen for a health concern (e.g., diabetes, weight management), (8) offered interventions that were exclusively self-help or technology based, and (9) only examined couples or family based interventions. When two or more studies were found that analyzed data from a single sample, only the study with the largest sample size was used. The search of the literature and identification of relevant articles was done through two stages and was completed by the first author (who has a doctoral degree in clinical psychology). At Stage 1, articles were reviewed at the abstract level to see if they met the nine inclusion/exclusion criteria. At Stage 2, all studies that appeared to meet these inclusion/exclusion criteria were then reviewed at the full text level to see if a psychotherapy dropout rate was reported. The flow of studies can be found in Figure 1.

Three primary search strategies were used to identify articles to be included in this meta-analysis. First, we replicated the strategy

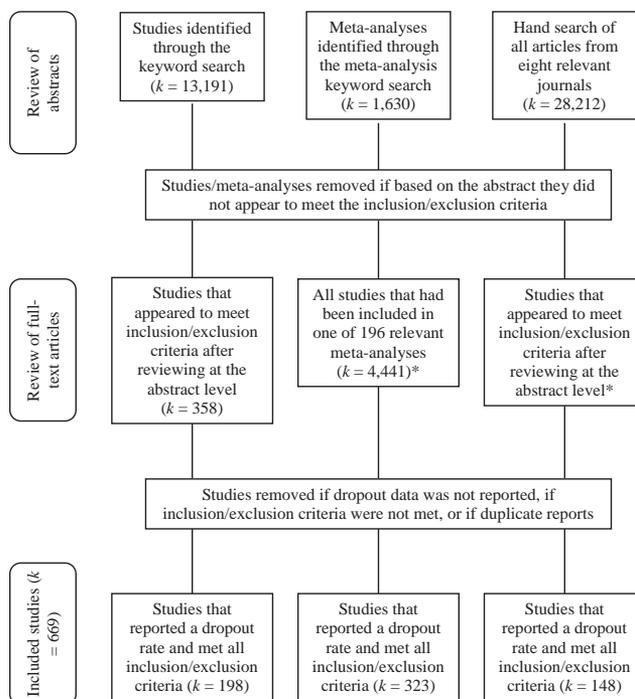


Figure 1. Study flow chart for identification of studies to be included in this review. An asterisk indicates that a full-text review was not needed for all of these studies because many had either been included in multiple meta-analyses (screening only occurred the first time the study was identified) or had been screened during the previous search strategies (keyword search first, then meta-analysis search, then hand search).

used by Wierzbicki and Pekarik (1993) by searching the database PsycINFO using the terms *attrition*, *client variables*, *continuance*, *dropout*, *psychotherapy dropout*, *termination*, or *therapist variables*. Using these terms, 13,191 citations were identified and reviewed at the Stage 1 abstract level. Based on the Stage 1 review, 358 articles were identified for possible inclusion and were then reviewed at the Stage 2 level. From this search, 198 studies met all inclusion/exclusion criteria for this meta-analysis.

Although this search identified a large number of studies for inclusion, we were concerned that many outcome studies that may have reported dropout rates were not identified because dropout or some derivation of the word was not included in the title, abstract, or as a keyword. In order to be more inclusive, we conducted a second search by looking for treatment outcome studies that have been included in previously conducted meta-analyses of treatment effects. The database PsycINFO was searched using the terms *meta-analysis* and *psychotherapy* or *therapy* or *psychological treatment* or *psychological intervention*. This search resulted in 1,630 meta-analysis citations, which were reviewed at the Stage 1 abstract level. The Stage 1 review resulted in 196 relevant meta-analyses. All of the individual studies that were included in one of the 196 meta-analyses were reviewed at the Stage 2 article level. From this search, 323 additional studies met all inclusion/exclusion criteria for the meta-analysis.

Through conducting the first two search strategies, we noticed that articles published in certain journals were more likely to report

dropout rates. We thus conducted a third search by hand searching all journals that published at least 20 included studies that were found through the previous two search strategies. The journals that were hand searched included *American Journal of Psychiatry*, *Archives of General Psychiatry*, *Behavior Therapy*, *Behaviour Research and Therapy*, *British Journal of Psychiatry*, *Journal of Consulting and Clinical Psychology*, *Psychotherapy*, and *Psychotherapy Research*. Articles were first reviewed at the Stage 1 abstract level and then, if deemed appropriate, were reviewed at the Stage 2 study level. Also included in this hand search were any studies that were referenced by other identified studies. This hand search resulted in an additional 148 studies that met all inclusion/exclusion criteria.

A total of 669 studies were found to meet all inclusion/exclusion criteria and were included in this meta-analysis. While we tried to find and review as many studies as possible, we recognize that our search likely missed some studies that report dropout rates. Given the search strategies that were used, the large number of studies that were reviewed, and the large number of studies that are included in this meta-analysis, we believe that our included studies are a good representation of the studies that may have been missed.

Coding Procedures

Each of the 669 included studies was then coded by the first author, including an identification of the study dropout rate and data for 20 other treatment, client, therapist, and study variables that were to be tested as moderators and covariates. The study dropout rate was coded as the percentage of clients who started the intervention and who were identified as dropouts according to each author's method of operationalization. We chose to base these rates only on clients who actually started treatment in order to match the procedures used by Wierzbicki and Pekarik (1993) and Garfield's (1994) distinction between treatment dropouts and rejecters.

Five different treatment variables were coded. Treatment *orientation* was coded as cognitive-behavioral (including CBTs, cognitive therapies, and behavioral therapies), integrative, psychodynamic, solution-focused, supportive/client-centered, and other. Separate dropout rates were recorded as subgroups in studies that compared two or more different treatment options. Treatment *format* was coded as group, individual, or combination (group and individual). The *time-limitations* of treatment were coded as none, low (time-limited and 20 or fewer sessions were offered), and high (time-limited and over 20 sessions were offered). Treatment *manualization* was coded as yes or no depending on whether the interventions were offered in a manualized format. Last, treatment *setting* was coded as outpatient clinic affiliated with a hospital or medical school, private outpatient clinic/practice, public outpatient clinic, research/specialty clinic, university affiliated clinic (psychology department training clinic and university counseling center), or inpatient.

Seven different client variables were coded. Client *diagnosis* was coded as anxiety disorder, eating disorder, mood disorder, personality disorder, psychotic disorder, trauma, or other. Client *age* was coded as a study average. *Race* was coded for each study as the percent of Caucasian clients. Client *gender* was coded as percent female for each study. *Marital status* was coded as the percent of clients married or in a committed relationship. *Employ-*

ment was coded as the percent of clients in full or part time employment. *Education* was coded both as the average number of years of education and as the percent of clients with at least some college-level education. When studies reported the data, averages/percentages between dropouts and completers on each of these client variables were coded.

Four different provider variables were coded. Provider *experience* level was coded as trainees (pre-degree attainment), experienced (post-degree attainment), and mixed (studies with both trainees and experienced clinicians serving as providers). Provider *gender* was coded as the percent of female providers. Provider *race* was coded as the percent of Caucasian providers. Last, the average provider *age* was coded for each study that reported these data.

Four study or design variables were also coded. *Definition of dropout* was coded as failed to complete a treatment protocol, attended less than a given number of sessions, stopped attending, or therapist judgment. This coding was based on the method of operationalization used by the original authors. Study *type* was coded as either efficacy or effectiveness. Efficacy studies are those that emphasize internal validity and typically take place in a laboratory or controlled setting, whereas effectiveness studies are those that emphasize external validity and take place in applied real-world clinical settings (Lambert & Ogles, 2004). In order to best get at this distinction, we coded a study as being an efficacy study if (1) participants were recruited for participation, and/or (2) strict exclusion criteria were used to screen participants for inclusion, and/or (3) the study procedures followed a strict protocol. *Year of publication* was also coded as was the *type of search strategy* that had been used to identify the study (original keyword search, treatment outcome meta-analysis search, or hand search).

In order to test the reliability of the coding that was done by the first author, three other coders were recruited to code a subset (10%) of the 669 studies that were included in this review. These coders included two-graduate students in a clinical-community psychology doctoral program and one undergraduate student who had previous experience coding similar variables for another meta-analysis. Coders were first trained and instructed in the coding procedures by the first author, and they then worked independently on the coding task. Across variables, there was a 91.01% agreement rate between judges.

Analytical Procedures

The primary aims of this meta-analysis was to calculate an average dropout rate across studies and to test which treatment, client, provider, and study design variables are associated with or moderate the observed dropout rates. Given the wide range of studies that have been included in this review (the way the studies were conducted, the interventions that were used, the clients that were treated, etc.), a random effects model was used in the calculation of the overall dropout rate and all testing of moderators and covariates. All data analyses were conducted using the computer program Comprehensive Meta-Analysis (Version 2), developed by Borenstein, Hedges, Higgins, and Rothstein (2005).

First, a weighted average dropout rate (number of clients who prematurely terminated out of the total number of clients who started the intervention) for the 669 included studies was calculated. Homogeneity in study dropout rates was examined using the

Q statistic; a significant Q value indicates heterogeneity in the dropout rates reported among the studies. The I^2 statistic was also calculated, which illustrates the degree of heterogeneity using a percentage.

Next, the categorical variables (treatment orientation, format, setting, time-limits, manualization, client diagnosis, provider experience level, study type, dropout definition, and search criteria) were tested as potential moderators. A random effects model and the Q statistic were used to test each of these categorical moderators. With these between-group analyses, a significant Q value indicates a difference between groups in reported dropout rates. Given the number of variables that were tested (10) as potential moderators, a Bonferroni-corrected alpha of .005 was used for the moderator analyses.

Meta-regression analyses were then conducted comparing dropout rates to each of the continuous variables (client average age, % female, % Caucasian, % in a committed relationship, % employed, average years of education, % with some college education, provider average age, provider % female, provider % Caucasian, and year of study publication). Due to the expected variance between studies, a random effects model was used (method of moments) for each meta-regression analysis. A regression coefficient was calculated for each predictor separately and was then tested for significance using a Z test. Predictors were tested separately due to the fact that very few studies included a value for all of the variables of interest. Many of the studies failed to describe all of the client demographic variables of interest, and most of the studies did not report any provider demographics. Any attempt to examine multiple predictors would either extremely limit the number of included studies in the analysis (calling into question generalizability to non-included studies) or would be isolated to a select group of the predictors for which studies more commonly reported data on. Given that we chose to run multiple (11) meta-regression analyses, a Bonferroni-corrected alpha of .0045 was used for each meta-regression.

Finally, many of the studies made comparisons between dropouts and completers for client demographic variables, including client age, race, gender, marital status, employment status, and level of education. Separate meta-analyses were run for each of these variables to further examine differences between dropouts and completers. Effect sizes (Cohen's d) were calculated for each variable and study in which sufficient data were present (i.e., means, standard deviations, proportion of cases, or results from statistical tests comparing dropouts to completers). For each analysis, individual study effect sizes were then pooled to provide an average weighted effect size. The weighted effect size was tested for statistical significance using a Z test, and a fail-safe N was calculated for each comparison. Given that multiple (6) meta-analyses were conducted, a Bonferroni-corrected alpha of .008 was used for each meta-analysis.

Although all of the studies were included in the calculation of the overall average dropout rate, some studies were not included in the various tests of the moderators and covariates due to missing details and/or data in the original articles. Additionally, some studies included dropout rates for more than one intervention (e.g., the study may have compared psychodynamic psychotherapy to CBT); in which case, separate dropout rates were used for each condition for the test of that moderator.

Results

A total of 83,834 adult clients from 669 studies were included in this meta-analysis. A reference list of the included studies can be found at www.psychotherapyresearchlab.com or by contacting the first author. In summary, the majority of studies were of anxiety ($k = 201$) and mood disorder ($k = 148$) treatments, were provided in an individual format ($k = 438$), tested a cognitive-behavioral intervention ($k = 439$), were time-limited with the duration specified at less than 20 sessions ($k = 449$), were delivered in research or specialty clinic ($k = 124$), and were of treatments delivered by experienced clinicians ($k = 285$). Failure to complete was the most frequent definition of dropout that was used ($k = 314$), followed by attending less than a given number of sessions ($k = 131$), and therapist judgment ($k = 63$). The majority of the studies were coded as efficacy-type studies ($k = 398$) compared to effectiveness studies ($k = 235$). Additional details of the grouping of studies according to the moderators that were tested can be found in Tables 1 and 2.

Overall Weighted Dropout Rate

Across all studies, the weighted mean dropout rate was 19.7%, 95% CI [18.7%, 20.7%]. The studies were found to be highly heterogeneous in their dropout estimates, $Q(668) = 7,694.74$, $p < .001$, $I^2 = 93.32$, with dropout rates ranging from 0% to 74.23%. This high degree of heterogeneity suggests true differences in the study dropout rates, indicating that the weighted mean dropout rate may not be the most appropriate estimate for all studies. Rather, this degree of heterogeneity suggests that the rates of premature discontinuation may differ depending on the potential moderators and covariates.

Treatment Moderators

Comparisons were made to test differences in dropout rates when studies were grouped by the five treatment moderators. Results are reported in Table 1. Dropout rates did not differ significantly between treatment orientation groups or by treatment format. However, significant differences in dropout rates were found for whether or not the intervention was time-limited (significantly higher dropout rates were found in treatments that had no predetermined time limit), whether or not the intervention was manualized (higher dropout rates were found for non-manualized treatments), and the treatment setting (university-based clinics, including psychology department training clinics and university counseling centers, experienced the highest average rates of premature discontinuation).

Client Moderators and Covariates

The relationship between premature discontinuation and the client variables was tested through three types of analyses: subgroup analysis for client diagnosis; separate meta-analyses for client age, gender, race, marital status, employment, and education; and separate meta-regressions for client age, gender, race, marital status, employment, and education. Results of the subgroup analysis for client diagnosis can be found in Table 2. Client diagnosis was found to significantly moderate the overall dropout rate, with the highest dropout rates for studies that either did not

Table 1
Results From the Subgroup Analysis of Treatment Moderators on Therapy Dropout

Moderator (k)	Dropout rate	95% CI	Q value	p value
Treatment orientation			1.59	.90
Cognitive-behavioral (439)	18.4%	17.4%, 19.5%		
Psychodynamic (69)	20.0%	16.7%, 23.8%		
Solution-focused (12)	19.2%	14.2%, 25.3%		
Supportive (55)	17.3%	14.7%, 20.3%		
Integrative (47)	19.1%	15.7%, 22.9%		
Other (32)	18.0%	13.8%, 23.2%		
Treatment format			6.15	.05
Individual (438)	18.7%	17.5%, 20.0%		
Group (169)	19.7%	18.0%, 21.6%		
Combination (27)	24.6%	19.9%, 29.9%		
Time-limited			85.19	<.001
No time limit (131)	29.0%	26.6%, 31.6%		
Low time limit (449)	17.8%	16.8%, 18.7%		
High time limit (64)	20.7%	17.8%, 24.1%		
Manualized			65.86	<.001
Yes (392)	18.3%	25.9%, 30.7%		
No (138)	28.3%	17.2%, 19.3%		
Setting			47.18	<.001
Inpatient (34)	20.8%	16.8%, 25.5%		
Outpatient: Hospital (99)	20.4%	18.3%, 22.8%		
Outpatient: Private (72)	17.4%	13.9%, 21.5%		
Outpatient: Public (59)	23.4%	20.3%, 26.8%		
University-based clinic (53)	30.4%	26.6%, 34.4%		
Research/specialty clinic (124)	17.3%	15.3%, 19.5%		

specify one particular disorder that was the focus of treatment or that treated a disorder that did not fall into one of the other diagnostic categories, followed by treatments for personality and eating disorders.

Six separate meta-analyses were conducted for the client variables in which studies reported data for both dropouts and completers (see Table 3 for results). Significant effect sizes were found for client age ($d = 0.16$; dropouts on average were younger) and

Table 2
Results From the Subgroup Analysis of Client, Provider, and Study Moderators on Therapy Dropout

Moderator (k)	Dropout rate	95% CI	Q value	p value
Client diagnosis			93.58	<.001
Anxiety disorder (201)	16.2%	15.0%, 17.5%		
Eating disorder (52)	23.9%	20.5%, 27.6%		
Mood disorder (148)	17.4%	15.6%, 19.4%		
Personality disorder (50)	25.6%	22.3%, 29.1%		
Psychotic disorder (26)	16.1%	12.4%, 20.7%		
Trauma (71)	20.5%	17.5%, 23.7%		
Other (119)	27.3%	24.8%, 30.0%		
Provider experience level			27.37	<.001
Trainee: Working toward degree (59)	26.6%	22.2%, 31.5%		
Experienced: Obtained degree (285)	17.2%	16.1%, 18.4%		
Mixed: Both levels included (99)	22.0%	19.7%, 24.5%		
Dropout definition			94.40	<.001
Failed to complete (314)	18.4%	17.3%, 19.6%		
< no. of sessions (131)	18.3%	16.4%, 20.3%		
Stopped attending (45)	24.4%	20.9%, 28.2%		
Therapist judgment (63)	37.6%	33.2%, 42.3%		
Study type			81.85	<.001
Efficacy (398)	17.0%	16.0%, 17.9%		
Effectiveness (235)	26.0%	24.2%, 27.9%		
Search strategy			115.13	<.001
Keyword search (198)	28.1%	26.1%, 30.2%		
Meta-analysis search (322)	16.4%	15.4%, 17.5%		
Hand search (149)	17.0%	15.2%, 19.1%		

Table 3
Results From the Meta-Analyses (Weighted Mean Effect Size) for the Client Variables

Variable (<i>k</i>)	<i>d</i>	95% CI	Z value	Direction	Fail-safe <i>N</i>
Age (52)	0.16	0.07, 0.24	3.58*	Dropouts younger	297
Gender (38)	0.01	-0.09, 0.11	0.15		
Race (11)	0.16	0.00, 0.32	2.01		
Marital status (15)	0.14	-0.02, 0.30	1.76		
Employment (13)	0.20	-0.03, 0.43	1.71		
Education (17)	0.29	0.11, 0.47	3.10*	Dropouts ↓ educated	69

* $p < .008$.

education ($d = 0.29$; dropouts on average were less educated). However, effect sizes comparing dropouts to completers were not significant for gender, race, marital status, or employment.

Seven separate meta-regressions were also conducted for each of the client variables that could be continuously coded across studies (see Table 4 for results). Significant prediction was found between the study rates of premature discontinuation and average study age (higher dropout rates were associated with younger samples), percent of female participants in a study (higher dropout rates were associated with fewer female participants), and percent of participants in a married or committed relationship (higher dropout rates were associated with fewer participants in a committed relationship). The percentages of clients who were Caucasian, employed, having attended some college, and participants' average years of education were not found to be significantly related to rates of premature discontinuation in the meta-regression analyses.

Provider Moderators and Covariates

Four provider variables were examined as moderators or covariates to the rates of premature discontinuation that were reported

across studies. Results of the subgroup analysis for provider level of experience can be found in Table 2. Dropout rates were significantly different between groups, with the highest rates observed when trainees were providing the services to clients (26.6%). Three separate meta-regressions (see Table 5) were run using the studies that reported data on provider age ($k = 31$), provider gender ($k = 147$), and provider race ($k = 20$). None of these three provider variables significantly predicted study dropout rates.

Design Moderators and Covariates

One meta-regression and three subgroup analyses were conducted to examine the influence of the four study design variables. Using a meta-regression analysis, no relation was found between publication year and study dropout rates (see Table 5). In contrast, results from the subgroup analyses (see Table 2) indicated that rates of premature discontinuation were significantly moderated by dropout definition (dropout rates were significantly higher when determined by therapist judgment compared to the other methods of operationalization), study type (higher dropout rates were reported by studies of treatment effectiveness compared to efficacy), and search strategy (studies found through the keyword search on

Table 4
Results From the Meta-Regressions (Method of Moments) for the Client Variables

Variable (<i>k</i>)	Point estimate	95% CI	Z value
Age (515)			
Slope	-0.014	-0.021, -0.007	3.95**
Intercept	-0.882	-1.154, -0.610	
Gender: % female (521)			
Slope	0.480	0.157, 0.802	2.92**
Intercept	-1.717	-1.948, -1.487	
Race: % Caucasian (243)			
Slope	-0.226	-0.752, 0.300	0.84
Intercept	-1.115	-1.537, -0.693	
Marital: % committed (298)			
Slope	-0.985	-1.436, -0.533	4.28**
Intercept	-0.987	-1.199, -0.774	
Employment: % employed (164)			
Slope	-0.447	-0.969, 0.075	1.68
Intercept	-1.226	-1.536, -0.916	
Education: Average years (101)			
Slope	-0.034	-0.137, 0.068	0.66
Intercept	-0.861	-2.264, 0.542	
Education: % some college (131)			
Slope	0.187	-0.345, 0.718	0.69
Intercept	-1.450	-1.803, -1.097	

** $p < .0045$.

Table 5
Results From the Meta-Regressions (Method of Moments) for the Provider and Study Variables

Variable (k)	Point estimate	95% CI	Z value
Provider age (31)			
Slope	-0.053	-0.090, -0.016	2.79
Intercept	0.684	-0.697, 2.065	
Provider gender: % female (147)			
Slope	0.348	-0.117, 0.812	1.47
Intercept	-1.651	-1.955, -1.346	
Provider race: % Caucasian (20)			
Slope	0.793	-0.079, 1.666	1.78
Intercept	-1.541	-2.285, -0.796	
Year of study publication (669)			
Slope	-0.002	-0.135, 0.010	0.30
Intercept	2.126	-21.351, 25.602	

average reported significantly higher dropout rates when compared to the averages from studies found through the meta-analysis and hand searches).

Discussion

In this meta-analytic review, we were interested in first identifying an updated rate of dropout for adult psychotherapy, and then examining the relationship between a number of treatment, client, provider, and study design variables and premature discontinuation from therapy. In summary, we found that across 669 studies and almost 84,000 clients, the average weighted dropout rate was 19.7%, 95% CI [18.7%, 20.7%]. Study dropout rates were higher when the study was identified using the keyword search strategy, when premature discontinuation was determined through therapist judgment, and in studies that were judged to examine effectiveness compared to efficacy. Further analyses found that dropout rates were also higher for younger clients, those seen in a university-based clinic, those with a personality or an eating disorder diagnosis, those who received a treatment that was not time-limited or manualized, and those who were seen by a provider in training. Dropout rates did not differ by treatment orientation, between individual and group treatments, by year of publication, by provider age, by provider race, by provider gender, by client race, or by client employment status. Mixed results were found for client gender, marital status, and level of education, depending on the analytical strategy that was used (meta-analysis vs. meta-regression).

The average dropout rate found in this study was significantly lower than the dropout rate that was found by Wierzbicki and Pekarik (1993) 2 decades ago (47%). Findings from the moderator and meta-regression analyses may help explain why the lower rate was observed in this analysis. First, no relationship was observed between premature discontinuation and year of publication. Although it is still possible that fewer clients are dropping out of therapy today compared to 20 or 40 years ago (the time frame of Wierzbicki and Pekarik's, 1993, review), there is no evidence from this review that dropout rates have been systematically decreasing over the past 20 years. One possible explanation for the differing dropout rates between the two reviews is the difference in the included studies. Where Wierzbicki and Pekarik analyzed 125 studies from 1974 to 1990, we included data from 669 studies

published over the past 2 decades. The comprehensive nature of our review may have resulted in including types of studies that may not have been included in their earlier review. Our keyword search matching Wierzbicki and Pekarik's resulted in only 198 studies, while our additional search strategies (meta-analysis and hand search) resulted in 471 studies. Analyses indicated that studies found through the second two searches yielded significantly lower average dropout rates compared to the first. Differences between ours and Wierzbicki and Pekarik's results may also be explained by the types of studies and interventions that were examined in the respective reviews. The majority of studies included in this meta-analysis were classified as efficacy studies, which had lower average dropout rates. Related to this finding, time-limited and manualized interventions also had significantly lower dropout rates. It is possible that this meta-analysis included more of these types of studies, either due to the comprehensive nature of the search or because more of these studies are now being conducted (DeLeon et al., 2011). Last, differences between the findings from our review and those from Wierzbicki and Pekarik's review may also be due to the data analytic techniques that were used. Where Wierzbicki and Pekarik used averages, correlations, and ANOVAs, we were able to use meta-analytic techniques that more appropriately assign weights and degrees of freedom when pooling data from different studies (Borenstein et al., 2009).

Similar to Wierzbicki and Pekarik (1993), in this meta-analysis we found that dropout rates differed depending on which definition of premature discontinuation was used. Dropout rates were highest when determined by therapist judgment (37.6%) and were lowest when determined by completion of a set number of sessions (18.3%) or a treatment protocol (18.4%). It should be recognized that therapists are reporting that almost 40% of their clients are dropping out prematurely. This difference may be due to the type of studies that used therapist judgment (more frequently effectiveness studies), but this finding may also be due to differences in the assumptions that are made about dropouts depending on the classification method. Historically, many have considered therapist judgment to be the preferred operationalization for therapy dropout due to the fact that the therapist has intimate knowledge about the client and changes that have occurred throughout the course of therapy (Pekarik, 1985b) and due to the fact that classifications based on failure to complete pigeonhole clients into a framework

or theory of how many sessions are appropriate and necessary. In reality, some clients will recover from their distress and impairment in just a couple of sessions, and other clients may need 100+ sessions to recover. However, an operationalization based on therapist judgment also has some limitations. Research has found that therapist judgment is not always accurate (Garb, 2005; Grove et al., 2000), and clients and therapists sometimes disagree about how many sessions are needed (Garfield, 1994; Pekarik, 1985a). In order to further our understanding of therapy dropout, it is important that a consistent operationalization be adopted. While this review did not test the accuracy of the existing operationalizations, given the variance in dropout rates that was observed, it could be suggested that a combination of methods be adopted. For example, using his or her familiarity with the client and the goals that were set for therapy, the therapist could make a judgment after considering whether or not the treatment protocol (if there was one) was completed, whether or not the client stopped treatment abruptly and unexpectedly, and whether or not an objective outcome measure indicates that the client has reliably improved or made a clinically significant change.

In this review, we found that rates of premature discontinuation were lower for efficacy-type studies (17%) compared to effectiveness studies (26%). The difference in dropout rates between these two types of studies may be due to differences in the degree of control over variables such as the types of clients that are served, what problems are worked on, who administers the treatment, and how the intervention is delivered. Indeed, this review also found that time-limited interventions and manualized treatments, which were most often paired with efficacy studies, also found lower dropout rates. While efficacy-type studies focus on controlling these conditions in an effort to increase internal consistency, control over all of these conditions is not typical for many real-world clients and settings. Hansen, Lambert, and Forman (2002) have previously pointed out the discrepancy in treatment durations between efficacy studies and actual practice, with clients in actual clinical settings attending fewer sessions and being less likely to recover by the end of treatment. Due to differences in the level of control over variables such as the types of clients served, one might conclude that results from clinical trials are not relevant to practice. While efficacy studies do not always mirror what typically happens in clinical practice and differences in the levels of control may explain most of the differences in dropout rates, it might still be beneficial for clinical settings to adopt some of the procedures that could be leading to the decreased rates of premature discontinuation. For example, efficacy studies and treatment protocols often begin with information about what the therapy will look like and how long it will last. Although this may not explain all of the differences in dropout rates between efficacy and effectiveness studies (these two types of studies may also differ on a number of other variables that may influence dropout rates, such as client functioning, more closely supervised therapists, settings, etc.), it may be beneficial for practicing clinicians to address role and duration expectations at the start of therapy even if a specific protocol is not used (Garfield, 1994; Reis & Brown, 2006; Swift & Callahan, 2011). Differences in dropout rates between efficacy and effectiveness studies and time-limited and open-ended duration treatments could also be due to the brevity of the interventions. Although clients might be more likely to complete briefer interventions, treatments with a small number of allowable sessions are

typically very focused in addressing specific problems, which may not fit with all of the goals the client has for therapy.

Client diagnosis and age were the only client variables that were consistently found to predict termination in all analyses. The fact that clients with personality disorder and eating disorder diagnoses had higher rates of dropout fits with McMurran et al.'s (2010) recent findings of a 37% non-completion rate among personality disorder clients. Given the rigid nature of these disorders and the slow progress that is often observed in their treatment, it is perhaps not surprising that this result was found. Our finding of age as a significant predictor of dropout also matches the finding from previous reviews that younger clients are more likely to prematurely terminate from therapy (Baekeland & Lundwall, 1975; Barrett et al., 2008). In this review, none of the other client demographics were consistently found to predict termination status. The meta-analyses indicated that dropouts and completers differed in terms of education, but not gender, race, marital status, or employment. The meta-regressions indicated that gender and marital status predicted therapy dropout, but race, employment, and education did not. These differences may be due to the way that the data were examined. In the meta-analyses, only studies that reported data for both dropouts and completers on the given variable could be included. However, the vast majority of studies did not include this type of data. The finding of educational differences between dropouts and completers was based on only 17 of the 669 studies. Many studies could not be included in the demographic analyses because they did not report data, even though they stated that dropouts and completers did not differ on any of the demographic variables. Many more studies could be included in the meta-regressions because these analyses were based on the averages for all study participants. However, these analyses do not tell us if there are actual differences between dropouts and completers, only that across studies the variable is or is not associated with rates of premature discontinuation. The lack of a relationship between dropout and the client demographic variables fits with the inconsistencies concerning demographics also pointed out by previous reviews (Barrett et al., 2008; Garfield, 1994; Reis & Brown, 1999).

Two of the most noteworthy findings from this review were that dropout rates did not differ between theoretical orientations and that experienced therapists attained significantly lower dropout rates than did those in training (17.2% vs. 26.6%). We would speculate, based on the literature, that therapists become more responsive and focused on the relationship as they move beyond their years of basic training, skills that have been found to have a strong influence on treatment outcomes (Hardy, Stiles, Barkham, & Startup, 1998; Norcross, 2011; Stiles, Honos-Webb, & Surko, 1998). This observation harks back to studies published more than 60 years ago showing that senior clinicians embracing different orientations were more similar in their views of the ideal therapy relationship than were novice and experienced therapists proclaiming allegiance to the same therapy model (Fiedler, 1950a, 1950b). The treatment gains associated with experience may also reflect the positive impact that has resulted from the growing awareness of the importance of common factors that cut across all brands of therapy (Greenberg, 2004; Wampold, 2001). Another possible explanation for the higher dropout rates among trainee clinicians is the fact that they more frequently work with younger clients and in university-based clinics, both of which were also found to be

associated with higher rates of premature discontinuation in our analyses.

Limitations

A number of limitations are present in this meta-analysis that should be considered when interpreting the findings. First, although we tried to be comprehensive in our review of the literature, we recognize that there are likely many studies that report dropout rates that were not included. Some of these may have been missed by our search of the literature; others may have never been published. We chose not to include unpublished studies in order to more closely match the procedures taken by Wierzbicki and Pekarik (1993); however, this does somewhat limit the comprehensiveness of our results. Additionally, many studies have been conducted over the time period of the review that have examined the efficacy or effectiveness of psychological interventions but have not reported dropout rates in their results. Given the large number of studies that we searched and the large number of studies that we included in the analyses, we believe that our results represent those studies that have been missed to the best degree possible. It should also be noted that some studies were not included in the various tests of the moderators and covariates due to missing details and/or data in the original articles, including some studies that stated, without reporting the actual data, that significant differences between dropouts and completers were not found. Rather than assign a zero value for the comparisons in these studies, which, taken across studies, might underestimate differences, studies that did not include sufficient data on a specific variable were not included in the analyses for that variable, which, in turn, could have led to an overestimate of true effects for the six meta-analyses that were conducted for the client variables (see Table 3). Given the smaller fail-safe N for educational differences, this result should be interpreted with caution.

A second limitation with this meta-analysis can be found in the coding procedures. Given the large number of studies that needed to be reviewed, only one reviewer evaluated all abstracts and studies and coded all the variables across studies. Although having cross-reviewing and coding for all studies would have been ideal, this was not possible given the number of studies that needed to be evaluated. However, a subset of the 669 studies (10%) were coded by a second set of judges, and a high level of agreement was found (91.01%), thus supporting the reliability of the results.

A third limitation with this study can be found in the variables that were examined. The set of variables that we analyzed were chosen based on the list of variables originally studied by Wierzbicki and Pekarik (1993) with some additional variables that we believed were important (i.e., treatment orientation, efficacy vs. effectiveness, study design). However, the results of this article are limited because a number of other variables that may play a significant role in therapy dropout were not included in our analyses: variables such as the therapeutic alliance, client expectations and preferences, and collaboration, to name a few. The decision was made not to include these variables in this meta-analysis because the relationship between therapy dropout and some of these process variables has been very recently reviewed by others (e.g., Sharf et al., 2010; Swift et al., 2011; Tryon & Winograd, 2011). However, future research should continue to investigate the

role that these types of variables play in preventing clients from prematurely terminating.

Our review was also limited in that we only conducted basic analyses of the moderators and covariates. Due to the number of questions that could have been asked and our desire to present findings with greater generalizability at this time, we did not examine possible interactions. For example, we found no difference in rates between theoretical orientations; however, we did not examine if they differed by orientation depending on diagnosis, treatment format, and so forth. The studying of these interactions is suggested for future research.

In this review, we use the terms dropout and premature discontinuation to describe the construct of interest. These are just two of the many different labels that have been used in the literature for the construct (e.g., attrition, early withdrawal, non-completion, premature termination, unilateral termination). Unfortunately, the labels have not been used consistently in terms of what they actually imply or measure (Hatchett & Park, 2003; Reis & Brown, 1999; Swift et al., 2009) and this is demonstrated by our finding of a significant difference in dropout rates depending on the operationalization that studies used. For this review, we defined dropout and premature discontinuation as occurring when a client has started therapy but then unilaterally discontinued prior to recovering from the problems or meeting the goals that led him or her to seek treatment (Garfield, 1994; Hatchett & Park, 2003; Swift et al., 2009). Although this definition implies that the client has made the choice to discontinue prematurely, we do not wish to imply that the client is to be blamed for this negative therapy event. Rather, the results from this meta-analysis indicate that a number of treatment, setting, and therapist variables also predict dropout, and these may play a significant role in the client's reasons for prematurely discontinuing therapy.

Conclusions

Although a lower rate of dropout was found in this meta-analysis compared to previous reviews, premature discontinuation from therapy is still a significant problem that needs to be addressed—one in five clients still discontinue therapy prematurely. It is important to increase efforts to help these clients stay in therapy for the full duration, and some recommendations based on the findings from this review can be made for researchers and practicing clinicians. In terms of future research, as previously mentioned, it is important that a consistent definition of dropout be adopted by the field. Without a consistent definition, it is difficult to compare results from one study to the next. If the previously mentioned method that combines therapist judgment with the other operationalizations (failure to complete and reliable improvement or clinically significant change) were to be adopted, researchers in both efficacy and effectiveness studies would need to administer standardized outcome scales at each session. Session-by-session administration of outcome measures also has the advantage of providing end-state data for clients who drop out prematurely. Therapists could then utilize this end-state information to make a decision about whether each of their clients has dropped out. Also, it is important that treatment outcome and process outcome studies not only report data on rates of premature discontinuation, but demographic information should be provided for both dropout and completer groups. Additionally, those studying dropout may want

to focus their research efforts on the settings (university-based clinics), clients (younger clients, those with personality and eating disorders), and situations (effectiveness research) where dropout rates are the highest. Further, this review focused on providing a broad and generalized analysis of premature discontinuation in psychological treatments for adults. Future reviews can focus on breaking down the results of this review to examine in more detail therapy dropout for one specific orientation (e.g., CBT, psychodynamic), disorder (e.g., anxiety, eating disorders), setting (e.g., university-based clinics, specialty clinics), types of studies (efficacy vs. effectiveness), and so on. Additionally, future reviews are needed to study dropout in the areas not covered by this review, including examining the influence of process variables on dropout, studying dropout in substance abuse treatments, reviewing dropout for children and/or family therapy, and so on.

In terms of clinical implications, the results from this review point to a number of client, setting, clinician, and treatment variables that are associated with an increased likelihood of dropout. By paying attention to these variables and making adaptations where needed, clinicians may be able to reduce rates of premature discontinuation in their work with clients. For example, the findings from this review suggest that clinicians should particularly work on retention with younger clients and those with a personality or eating disorder diagnosis. Extra efforts to prevent dropout should also be emphasized for trainees and in university-based clinic settings, variables that were also found to be associated with higher rates of dropout. A number of strategies for reducing premature discontinuation in therapy have been identified, including discussing expectations regarding therapy roles and behaviors, providing education about adequate treatment duration, addressing motivation, repairing alliance ruptures, using therapist feedback, addressing client preferences, providing time-limited interventions, and increasing perspective convergence in the psychotherapy dyad, to name a few (Barrett et al., 2008; Ogrodniczuk, Joyce, & Piper, 2005; Reis & Brown, 1999; Swift & Callahan, 2011; Swift et al., 2011; Swift, Greenberg, Whipple, & Kominiak, in press). These efforts to reduce the number of clients who drop out of therapy may in turn reduce the negative impact that premature discontinuation has on clients (increased number of clients with improved outcomes), therapists (decreased experience of loss of revenue, lost time, and demoralization), and the mental health care system (decreases in loss of revenue experienced by clinics and decreases in the number who over-utilize the system).

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Received June 10, 2011

Revision received March 15, 2012

Accepted March 21, 2012 ■