The Impact of Client Treatment Preferences on Outcome: A Meta-Analysis

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An important part of evidence-based practice is to include client preferences in the treatment decision-making process. However, based on previous reviews of the literature there is some question as to whether including client preferences actually has an effect on treatment outcome. This meta-analytic review summarized data from over 2,300 clients across 26 studies comparing the treatment outcome differences between clients matched to a preferred treatment and clients not matched to a preferred treatment. The findings indicate a small significant effect ($r = .15$, $CI_{.95}$: .09 to .21) in favor of clients who received a preferred treatment. The binomial effect size indicated that matched clients have a 58% chance of showing greater improvement, and further analysis indicate that they are about half as likely to drop-out of treatment when compared with clients not receiving a preferred treatment. Study design was seen to be a moderating variable in that partially randomized preference trials may underestimate the treatment preference effect. Implications for best practice standards are discussed. J Clin Psychol 65:368–381, 2009.

Keywords: Client variables; outcome; preferences; evidence-based practice; meta-analysis

Preferences in psychotherapy have been defined as factors that a client shows a desire for in the therapy encounter and can include role preferences, preferences for the type of treatment, and preferences for the type of therapist (Glass, Arnkoff, & Shapiro, 2001). Specifically focusing on the type of treatment, clients may express preference for treatment or no treatment, psychotherapy or pharmacotherapy,

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cognitive-behavioral or interpersonal psychotherapy, individual or group therapy, brief or long-term psychotherapy, etc. Numerous studies have indicated that clients do indeed have preferences in such areas (Aita, McIlvain, Backer, McVea, & Crabtree, 2005; Ertly & McNamara, 2000; Riedel-Heller, Matschinger, & Angermeyer, 2005). Although it is evident that treatment preferences do exist, there is little consensus as to the effect of this type of client preference on treatment outcome.

Current Findings for Preference Effects

Concerning the effect of client treatment preference on treatment delivery, the American Psychological Association (APA) and other health care organizations have deemed the inclusion of client preferences as an important part of best-practice standards (APA, 2006; Institute of Medicine, 2001). For example, evidence-based practice in psychology has been defined as "the integration of the best available research with clinical expertise in the context of patient characteristics, culture, and preferences" (APA, 2006, p. 273). APA further states that it should be a central goal to maximize patient choice in the clinical decision-making process.

Although APA has emphasized the importance of including client preferences in the delivery of treatment, empirical reviews of the literature have illustrated mixed findings concerning the effects of client treatment preferences on observed therapy outcome. Rosen (1967) completed one of the earliest reviews examining client preferences. Although recognizing that the literature at the time was far from sufficient to make any major conclusions, Rosen, at one point, suggests that there is no relationship between the success of psychotherapy and whether the clinician followed the client's preferred procedure. However, at another point in the review, Rosen suggests that client preferences "might" have an effect on a number of outcome related variables. The seemingly contradictory conclusions illustrate the early mixed findings on the topic.

More recent reviews have made similar conclusions about the mixed findings for the effect of client treatment preferences on therapy outcome. Glass et al. (2001) reviewed 10 studies examining the relation between matching clients to a preferred treatment and therapy outcome. Of those 10, two found a positive relationship with the remainder finding a mixed or no relationship between treatment preference matching and outcome. Similarly, King et al. (2005) reviewed effect sizes for 32 randomized controlled studies with patient preference arms and found that although client preferences had an effect on study recruitment, there was minimal to no effect on treatment outcome. Although important to understanding the effects of client preferences on treatment outcome, these previous reviews have included a number of limitations. Table 1 includes a brief summary of each of these reviews with listed limitations.

Methodology for Studying Preference Effects

The mixed findings that have been observed in previous reviews may partially be because of the fact that existing studies have used differing methods in defining the preference conditions. Perhaps the most straightforward method to studying the effect of treatment preferences on treatment outcome is to directly randomize or assign participants to a preference match or non-match condition. Illustrative of this method, Devine and Fernald (1973) provided snake phobic clients with a video

Table 1
Summary of Previous Reviews of the Preference Effect on Treatment Outcome

Review	Results	Shortcomings
Rosen (1967)	No relationship between success of treatment and whether preferred procedures were followed	Qualitative review only Conclusions based on a small number of studies
Glass et al. (2001)	2 studies positive preference effect, 11 studies mixed findings, 7 studies no preference effect	Box count method Included studies not using actual treatments
King et al. (2005)	Preferences led to substantial number refusing randomization, 32 studies showed small to negligible preference effects	Included studies not related to psychological problems Included only studies using a PRPT design

Note. PRPT = Partially Randomized Preference Trial.

explanation of four treatments and then asked those clients to indicate their degree of preference for each. In this study, clients were then assigned to either a treatment for which they showed a strong preference or a treatment for which they showed a strong dislike, and the effects of this assignment on outcome were examined. A variation of this design, in which some clients are allowed to choose their preferred treatment while other clients are not offered a choice, has also been used. These types of designs specifically allocate the treatment based on the preference condition group (match/no-match) to which clients are randomized and are perhaps most adequate in their ability to measure the preference effect.

Preference effects have also been studied using data from randomized controlled trials (RCTs) in which clients are randomized to a treatment type condition. Leykin, et al. (2007) used an RCT to study preference effects. In this NIMH-supported clinical trial, clients were randomized to receive either cognitive therapy or pharmacotherapy for the treatment of depression. Prior to randomization, clients were asked to indicate a preference for either treatment if they had one. Thus, by chance, some of the clients were randomized to receive a treatment they preferred and others were randomized to receive a treatment they did not prefer. This type of methodology allows researchers to compare outcomes with those who, by chance, are matched to their preferred treatment to those who are not matched to their preferred treatment. Although deemed the ''gold standard'' of treatment outcome research, because of high internal validity when comparing treatments, RCTs have been criticized for their failure to take strong preferences into account because of some clients refusing to be randomized (Brewin & Bradley, 1989; Howard & Thornicroft, 2006). This shortcoming may pose a particular difficulty when examining preference effects due to the inclusion of only clients with weak preference (i.e., receiving a non-preferred treatment for this population may not be as threatening). Further, because clients in this design are not randomized into preference conditions, this type of study may lack internal validity when comparing preference groups.

In an effort to address the shortcomings in RCTs with regards to preferences, partially randomized preference trials (PRPTs) have been introduced. In a PRPT, clients who refuse randomization are given their treatment of choice, while clients who agree to randomization are assigned into a treatment condition. Bedi et al. (2000) provides an example of how a PRPT can be used to study preference effects.

In this study comparing psychotherapy with pharmacotherapy for the treatment of depression, 220 clients refused randomization and were given their treatment of choice, while 103 clients agreed to randomization and were assigned to a treatment condition. Preference effects were examined by comparing outcomes with those clients who were given their preferred treatment to the randomized clients. Although this type of design may be more effective in including clients with strong preferences, PRPTs still exhibit a shortcoming in that no clients actually receive a non-preferred treatment. The resulting difference between preference groups found using this type of design may therefore be attenuated because of the fact that the preference comparison groups are not equal with regards to the strength of their preferences. Table 2 details the nature of these three designs and lists strengths and weaknesses for each with regards to their ability to measure the preference effect on treatment outcome.

Purpose of Present Study

Given the different study designs used to measure preference effects, the limitations of previous reviews, and the lack of consensus in the field as to whether client preferences have an effect on treatment outcome, it was deemed important that a to-date meta-analytic review be conducted specifically by comparing the effects from various preference designs. Given that other types of preferences (role and therapist) have been observed to impact treatment outcome (Glass et al., 2001), it was hypothesized that client treatment preferences would also show an effect on the treatment outcome. Further, given the differences in the methodology used to define preference conditions, it was hypothesized that the observed effect would vary by study design.

Table 2
Comparison of Designs Used to Measure Preference Effects

Design type	Method of treatment allocation	(+) Strengths/(−) weaknesses
Match/no-match	Clients are randomized/assigned to a condition that matches their preference or a condition that does not match their preference	(+) Study explicitly designed to measure preference effects (−) Little can be inferred about the treatment effects
RCT	Clients are randomized to a type of treatment (CBT, pharmacotherapy, etc.) which, by chance, may or may not match their preference	(+) Gold standard for evaluating treatments (–) Preferences may not be as strong due to some clients refusing randomization (−) Although treatment conditions are equal due to randomization, preference conditions may not be
PRPT	Clients who refuse randomization are given their preferred treatment while the remaining clients are randomized to a treatment	(+) Includes clients who refuse randomization (−) Compares clients who get their preferred treatment to clients who have no preference (no clients get a non-preferred treatment)

Note. CBT = Cognitive-Behavioral Therapy; PRPT = Partially Randomized Preference Trial; RCT = Randomized Controlled Trial.

Method

A review of the literature was conducted to test the hypothesis that client treatment preferences influence the treatment outcome. Specifically, this review aimed to examine whether clients who were provided their preferred treatment exhibited better treatment outcomes than compared with clients who were not provided their preferred treatment.

Procedure

The databases PsycINFO and ProQuest were searched for articles published between 1967 (Rosen's review of client preferences) and October 2007. The search was conducted using the following terms: *preference* or *choice* in combination with *treatment* or *therapy* or *psychotherapy* and *outcome*. This search was limited to English language articles. To be comprehensive, unpublished dissertations were included in this review. Using these terms, 3,105 citations were identified. *Clinical Psychology*: *Science and Practice*; *Journal of Clinical Psychology*; *Journal of Consulting and Clinical Psychology*; *Journal of Counseling Psychology*; *Professional Psychology*: *Research and Practice*; *Psychotherapy Research*; and *Psychotherapy*: *Theory*, *Research*, *Practice*, *Training* were also hand-searched for relevant studies. Further search strategies included pulling citations from the reference lists of relevant articles and exploring all studies in PsycINFO that cited relevant studies. All abstracts from the resulting citations were reviewed. Based on the abstracts, 97 potentially relevant articles were further evaluated to determine if they met inclusion criteria.

All studies that assessed client treatment preferences prior to treatment and examined the outcome effect of matching or not matching clients to their preferred treatment were included in the review. Studies were not included if they used a non-clinical sample (e.g., students participating for course credit), studied a variable not related to a clinical problem (e.g., speed reading), examined preferences other than treatment preferences (e.g., therapist preferences), did not involve matching of at least part of the sample to their preferred treatment (e.g., the treatments used for allocation did not correspond to the treatments clients were asked to evaluate), and did not involve the administration of a psychological treatment (e.g., comparison of only medication treatment groups, use of interview only interventions). Where multiple studies analyzed the data from the same group of clients, the study with the most recent follow-up period or with the largest sample was used in the analysis. A total of 28 studies were deemed eligible for inclusion (see Table 3).

Studies eligible for inclusion were then searched for a number of factors relevant to this review: treatment options presented, treatments provided, method of allocation to preference conditions, treatment problems/goals, study design, number and demographics of participants, and the primary outcomes measured. The primary outcomes were identified through statements/hypotheses made by the original authors.

Data Analyses

The results from each of the studies comparing preference match with preference non-match conditions were summarized using the *r* statistic. The calculations of the *r* statistic followed the procedures outlined by Rosenthal (1991), depending on the

Table 3
Studies Comparing Preference Match to Non-Match Meeting Inclusion Criteria

Source	Population (*N*)	Treatment options	Primary outcome	Study design
Adamson et al. (2005)	Alcoholics (87) counseling	MET vs. NDC	% heavy drinkers	RCT
Bakker et al. (2000)	Clients w/panic (66)	CBT vs. pharmacotherapy	# of panic attacks per week	PRPT
Brown et al. (2002)	Alcoholics (107)	Relapse preventions vs. 12-step facilitation	# of days of alcohol use of last 90 days	RCT
Calsyn et al. (2000)	Homeless clients w/ severe mental illness (105)	Assertive Community Treatment vs. other	Stable housing	Match/no-match
Chilvers et al. (2007)	Clients w/depression (127)	Psychotherapy vs. pharmacotherapy	BDI	PRPT
Cooper (1980)				
study 1	Clients w/ snake phobia (60)	Implosive therapy vs. physical exercise	Approach to snake	Match/no-match
study 2	Clients w/ assertiveness problems (60)	Behavior rehearsal vs. physical exercise	Rating of assertiveness	Match/no-match
De C Williams et al. (1999)[b]	Clients w/ chronic pain (205)	Inpatient vs. outpatient	Sickness impact profile	PRPT
Devine and Fernald (1973)	Clients w/ snake phobia (32)	Systematic desensitization vs. encounter vs. rational-emotive vs. modeling	Approach to snake	Match/no-match
Elkin et al. (1999)	Clients w/ depression (82)	Psychotherapy vs. pharmacotherapy	BLRI	RCT
Fuller (1988)[a]	Overweight clients (119)	Nutritional education vs. behavior management vs. exercise	Weight loss	Match/no-match
Gossop et al. (1986)	Opiate addicts (60)	Inpatient vs. outpatient	Withdrawal	PRPT
Gum et al. (2006)	Older depressed clients (46)	Psychotherapy vs. pharmacotherapy	SCL-20 depression score	RCT
Hornstra and Lubin (1974)[b]	Psychiatric clients (381)	Psychotherapy vs. pharmacotherapy	Katz social adjustment scale	Assigned treatment
Iacoviello et al. (2007)	Clients w/ depression (39)	Psychotherapy vs. pharmacotherapy	CALPAS	RCT
Kadish (1998)[a]	Clients w/ social phobia (27)	CBT vs. psychodynamic therapy	SPAI	Assigned treatment
Leykin et al. (2007)	Clients w/ depression (109)	Cognitive therapy vs. pharmacotherapy	HRSD	RCT
Lin et al. (2005)	Clients w/ depression (335)	Psychotherapy vs. pharmacotherapy	SCL-20 depression score	Assigned treatment
Macias et al. (2005)	Schizophrenic clients (88)	Assertive Community Treatment vs. other	Employment	RCT
McKay et al. (1995)	Male alcoholics (119)	Inpatient vs. day hospital	% of last 30 days intoxicated	PRPT
McKay et al. (1998)	Male cocaine abusers (171)	Inpatient vs. day hospital	# of days of cocaine use of last 30 days	PRPT

TABLE 3. Continued

Source	Population (*N*)	Treatment options	Primary outcome	Study design
Mendonca and Brehm (1983)	Obese children (15)	Three weight loss programs	Weight loss (lbs)	Match/no-match
Renjilian et al. (2001)	Obese adults (58)	Individual therapy vs. group therapy	Weight loss (lbs)	Match/no-match
Rokke et al. (1999)	Older clients w/ depression (40)	Behavior therapy vs. cognitive therapy	% remitted	Match/no-match
Sterling et al. (1997)	Cocaine dependent clients (67)	Individual therapy vs. group therapy	# of days of cocaine use of last 30 days	Match/no-match
Van Dyck and Spinhoven (1997)	Clients w/ agoraphobia (64)	Exposure vs. exposure plus hypnosis	Fear questionnaires	Match/no-match treatment first/second
Wallach (1988)[a]	Women w/ dys- menorrhea (30)	Cognitive treatment vs. somantic treatment	Pain variables	RCT
Ward et al. (2000)	Clients w/ depression (315)	CBT vs. NDC vs. general practitioner care	BDI	PRPT

Note. BDI = Beck Depression Inventory; BLRI = Barrett-Lennard Relationship Inventory; CALPAS = California Psychotherapy Alliance Scale; CBT = Cognitive-Behavioral Therapy; HRSD = Hamilton Rating Scale for Depression; MET = Motivational Enhancement Therapy; NDC = Non-directive counseling; PRPT = Partially Randomized Preference Trial; RCT = Randomized Controlled Trial; SCL-20 = Hopkins Symptom Checklist-20 depression score; SPAI = Social Phobia Anxiety Inventory.

[a]Dissertations meeting inclusion criteria.

[b]Studies not included in the analysis due to a lack of reporting sufficient data.

reporting of data by the original authors. The calculations were completed using the computer program Comprehensive Meta-analysis (Version 2), developed by Borenstein, Hedges, Higgins, and Rothstein (2005). Of the 28 studies, two did not contain sufficient outcome data to include their results in this analysis, 26 studies were included. Contact with the authors of the two excluded studies was attempted, but not successful.

Effect sizes and confidence intervals for each of the studies were first calculated, which resulted in 26 study effect sizes. An overall weighted effect size was then calculated across studies. As considerable heterogeneity between studies was expected (due to differing study designs), a random effects model was used. The overall effect size was also translated into a binomial effect size to aid in interpretation, and a fail safe *N* was calculated to determine the number of non-significant, non-published studies needed to dilute the results of the meta-analysis. Further, the 26 included studies were grouped by study design and the *Q*-statistic was used to test study design as a moderator variable. A significant *Q*-statistic indicates heterogeneity between groups that is greater than expected by chance. To aid in interpretation the I^2 statistic, which illustrates the degree of heterogeneity in terms of percentages, was calculated as well. A fixed effects model was used to calculate differences between study design groups.

Results

Study Characteristics

Twenty-six studies examining the effect of client preferences on treatment outcome by comparing clients who were matched to their preferred treatment to clients who were not matched to their preferred treatment were included in this meta-analysis. Nine of the studies randomized or assigned clients to a preference match or non-match condition, eight of the studies were RCTs in which clients were randomized to a treatment condition without regards to their preference, six of the studies were PRPTs in which clients were assigned to their preferred treatment if they refused randomization or randomized to a treatment condition if they agreed to randomization, and the remaining three studies assigned clients to a treatment condition without regard to preference.

A total of 2,356 clients from the 26 studies were represented in this meta-analysis. Of the included clients, 1,240 had received their preferred treatment, while the remaining 1,116 had not received their preferred treatment. The clients were predominately Caucasian (77.39%), male (64.65%), with an average age of 42.51 years. The studies examined a number of different treatments (e.g., cognitive-behavioral therapy, group therapy, pharmacotherapy, etc.) for a variety of client diagnoses or target complaints (see population descriptors in Table 3).

Preference Effects on Drop-Out

A total of 10 of the 26 studies reported drop-out rates for clients who received their preferred treatment compared with clients who did not receive their preferred treatment. An odds ratio effect size was calculated for each of these studies and can be viewed in Table 4. Because of the heterogeneity between studies [$Q(9) = 17.14$, $p < .05$, $I^2 = 47.48$], a random effects model was used to calculate the overall effect. The resulting effect was 0.58 ($CI_{.95}$: 0.10–0.18, $p < .05$), thus indicating that the

Table 4
Outcome Effect Sizes for Preference Match vs. Non-Match Groups

Source match	*N* of analysis (match/ non-match)	Primary outcome	Effect size *r* ($CI_{,95}$)	Drop-out odds ratio match vs. non-match
Adamson et al. (2005)	87 (30/57)	% heavy drinkers	.25 (.04 to .44)	
Bakker et al. (2000)	66 (31/35)	# of panic attacks per week	.21 (−.02 to .43)	0.84
Brown et al. (2002)	107 (56/51)	# of days of alcohol use	.18 (.00 to .35)	
Calsyn et al. (2000)	97 (–/–)	Stable housing	.05 (−.15 to .24)	
Chilvers et al. (2007)	127 (96/31)	BDI	.17 (0.0 to .33)	
Cooper (1980) study 1	60 (30/30)	Snake phobia	.33 (.09 to .53)	
Cooper (1980) study 2	60 (30/30)	Assertiveness rating	.26 (.02 to .47)	
Devine and Fernald (1973)	32 (16/16)	Snake phobia	.51 (.24 to .71)	
Elkin et al. (1999)	75 (–/–)	BLRI	.25 (.03 to .45)	0.19
Fuller (1988)	74 (42/32)	Weight loss (lbs)	−.26 (−.45 to −.04)	0.42
Gossop et al. (1986)	60 (40/20)	Withdrawal	.23 (−.04 to .48)	
Gum et al. (2006)	46 (–/–)	SCL-20	.04 (−.24 to .32)	
Iacoviello et al. (2007)	39 (17/22)	CALPAS	.50 (.25 to .69)	
Kadish (1998)	27 (–/–)	SPAI	.11 (−.28 to .47)	
Leykin et al. (2007)	109 (66/43)	HRSD	.15 (−.04 to .33)	0.62
Lin et al. (2005)	335 (241/94)	SCL-20	.10 (.00 to .21)	
Macias et al. (2005)	88 (41/47)	Employment	.04 (−.19 to .27)	0.23
McKay et al. (1995)	144 (96/48)	% of days intoxicated	.04 (−.12 to .21)	0.76
McKay et al. (1998)	152 (51/101)	# of cocaine use days	.12 (−.03 to .27)	1.13
Mendonca and Brehm (1983)	15 (7/8)	Weight loss (lbs)	.55 (.15 to .80)	
Renjilian et al. (2001)	58 (29/29)	Weight loss (lbs)	−.07 (−.31 to .19)	1.43
Rokke et al. (1999)	22 (13/9)	% remitted	.18 (−.26 to .56)	0.08
Sterling et al. (1997)	67 (34/33)	# of cocaine use days	.23 (.00 to .44)	0.98
Van Dyck and Spinhoven (1997)	64 (32/32)	Fear ratings	.11 (−.14 to .34)	
Wallach (1988)	30 (14/16)	Pain variables	.21 (−.14 to .52)	
Ward et al. (2000)	315 (106/209)	BDI	−.04 (−.15 to .07)	
Overall: 26 studies	2356 (1240/1116)		.15 (.09 to .21)[a]	0.58[b]

Note. BDI = Beck Depression Inventory; BLRI = Barrett-Lennard Relationship Inventory; CALPAS = California Psychotherapy Alliance Scale; HRSD = Hamilton Rating Scale for Depression; SCL-20 = Hopkins Symptom Checklist-20 depression score; SPAI = Social Phobia Anxiety Inventory.
[a] $p > .001$.
[b] $p > .05$.

clients who received their preferred treatment were about half as likely to drop-out compared with clients who did not receive their preferred treatment.

Study Effects on Outcome

Effect sizes based on outcomes were calculated for each of 26 included studies. According to Cohen's conventions for the *r* effect size statistic, effect sizes below .10 indicate negligible effects, between .10 and .23 indicate small effects, between .24 and .36 indicate medium effects, and .37 or above indicate large effects (Cohen, 1988). Of the 26 study effect sizes, 6 indicated a negligible effect, 12 indicated a small outcome

Table 5
Comparison of Effect Sizes by Study Design

Study design	# of studies	Effect size r ($CI_{.95}$)	Q value	I^2 value
Match/no-match	9	.20 (.11 to .28)[b]	16.55[a]	78.34
PRPT	6	.07 (.01 to .14)[a]	8.56	41.61
RCT	8	.20 (.12 to .27)[b]	9.07	22.80
Total between			7.72[a]	

Note. PRPT = Partially Randomized Preference Trial; RCT = Randomized Controlled Trial.
[a]$p > .05$.
[b]$p > .01$.

effect, 4 indicated a medium effect, and three indicated a large effect size, all in favor of clients who were given their preferred treatment. One of the 26 studies indicated a medium effect size in favor of the clients who were not given their preferred treatment. The effect size estimates with 95% confidence intervals can be viewed in Table 4.

Overall Effect on Outcome

Effect sizes were further averaged across studies to produce an overall weighted effect size. Because of the heterogeneity of variance between the 26 study effect sizes [$Q(9) = 17.14$, $p < .05$, $I^2 = 47.48$], a random effects model was used. The overall weighted effect size was $r = .15$, $p < .001$ ($CI_{.95}$: .09 to .21), indicating a small, but significant, effect. The corresponding binomial effect size was .58, indicating that clients who were matched to their preferred treatment had a 58% chance of showing a greater improvement over those clients who were not matched to their preferred treatment (42% chance of showing a greater improvement). The fail safe N was 291 studies, signifying that 291 unpublished studies with non-significant results would be required to dilute the results of this meta-analysis; much larger than the critical N of 135 studies, indicating a greater confidence in the found results.

Effect by Design

Overall effect sizes were further calculated for each of the design conditions, and can be viewed in Table 5. The effect sizes between groups were compared using a fixed effects model. The overall difference between groups was significant [$Q(2) = 7.72$, $p < .05$]. Thus, study design is found to be a moderating variable. Post-hoc comparisons found that the group of PRPTs showed effect size estimates that were significantly lower than the group of RCTs [$Q(1) = 5.56$, $p < .05$] and the group of match/non-match studies [$Q(1) = 5.06$, $p < .05$].

Discussion

This meta-analytic review was conducted in an effort to clarify the outcome effect of providing clients with their preferred treatment. A small significant effect was found for treatment outcome, signifying an advantage for those clients matched to their preferred treatment compared with non-matched clients. In addition, based on results from studies that reported drop-out rates, clients who received their preferred treatment were significantly less likely to drop out compared with clients who did not receive their preferred treatment. It was further found that PRPTs provided

significantly lower estimates of the preference effect on treatment outcome compared with studies using other designs. Although strengths and weakness can be found in all of the evaluated preference study designs, this finding may be due to the fact that PRPTs actually compare clients with strong preferences with clients without strong preferences. The preference effect may thus be attenuated in this study design because of the fact that no clients actually received a non-preferred treatment.

Seeing the importance of treatment preference on the therapy process and outcome, a number of different methods for including client preferences in the treatment decision-making process have been suggested. A shared decision-making model is one promising method that may easily be implemented in practice (Charles, Gafni, & Whelan, 1997; Ford, Schofield, & Hope, 2003; Makoul & Clayman, 2005). This model has four key components: (a) two parties are involved, (b) both parties share information, (c) both parties discuss preferences with regards to treatments, and (d) an agreement is reached as to the treatment to implement. It has further been recommended to be used whenever various treatment options exist (Charles et al., 1997).

It should be noted that the effect found in favor of including client preferences in this meta-analysis was small. This magnitude of effect size indicates that only a small amount of the variance in outcome may actually be due to the client receiving a preferred treatment. However, this small effect size may have been expected given the number of variables that contribute to successful therapy outcome (Wampold, 2001). Seeing that only a small effect size was found, the clinical implications of such an effect should be considered. Clients may not always know of the best available treatments and they may not always know what will lead to the best outcomes. Further, not all clients indicate a preference to be involved in the decision-making process (Benbassat, Pilpel, & Tidhar, 1998). Thus, it would not likely be beneficial to leave all decision-making in the hands of all clients. A collaboration where both parties share information and discuss options and preferences openly may be recommended. Such collaboration, regardless of the size of the effect, has been argued to be an ethical right of clients' ability to determine the outcome of their own lives (Charles et al., 1997; Ford et al., 2003).

A number of limitations in this meta-analytic study should be considered. First, and perhaps most important, the included studies differed in the quality of study design. This issue was partially addressed by the separate analyses for differing study designs. However, variations in quality within each study group were still observed. The quality impairments seemed to mainly affect the internal validity of some of the studies, seeing that the comparison groups may not have been equal. This is particularly a problem with PRPTs, which are currently an often-used method to studying preference effects. Still, all studies were included in an effort to complete a truly comprehensive analysis. However, because of this limitation, some caution should be used in interpreting the results of this analysis. Second, this analysis reviewed only studies dating back to 1967, the date of Rosen's previous review of the literature. Although one may question the quality of the few studies examining this topic prior to 1967, inclusion of these studies could possibly alter the findings of this meta-analysis. In addition, it should be noted that the review was limited to studies published in English, thus limiting the comprehensiveness of the analysis to some degree. Third, the number studies included in this analysis was relatively small. This issue particularly pertains to the between group comparisons that were made.

In conclusion, this meta-analysis found that there is a small effect on treatment outcome in favor of clients who are matched to their preferred treatment compared

with clients who are not matched to their preferred treatment. Specifically, clients who were matched to their preferred treatment had a 58% chance of showing greater outcome improvement and were about half as likely to drop-out of treatment compared to non-matched clients. Thus, it can be recommended that clinicians include client preferences in the treatment decision-making process. Further research is needed to explain why the outcome effect in favor of clients who received their preferred treatment was observed.

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