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Client Preferences Affect Treatment Satisfaction, Completion, and Clinical Outcome: A Meta-Analysis

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Abstract

We conducted a meta-analysis on the effects of client preferences on treatment satisfaction, completion, and clinical outcome. Our search of the literature resulted in 34 empirical articles describing 32 unique clinical trials that either randomized some clients to an active choice condition (shared decision making condition or choice of treatment) or assessed client preferences. Clients who were involved in shared decision making, chose a treatment condition, or otherwise received their preferred treatment evidenced higher treatment satisfaction (ES_d = .34; p < .001), increased completion rates (ES_{OR} = 1.37; ES_d = .17; p < .001), and superior clinical outcome (ES_d = .15; p < .0001), compared to clients who were not involved in shared decision making, did not choose a treatment condition, or otherwise did not receive their preferred treatment. Although the effect sizes are modest in magnitude, they were generally consistent across several potential moderating variables including study design (preference versus active choice), psychoeducation (informed versus uninformed), setting (inpatient versus outpatient), client diagnosis (mental health versus other), and unit of randomization (client versus provider). Our findings highlight the clinical benefit of assessing client preferences, providing treatment choices when two or more efficacious options are available, and involving clients in treatment-related decisions when treatment options are not available.

Keywords

treatment choice; patient preference; shared decision making; completion; satisfaction; outcome; meta-analysis

Increasingly, two or more efficacious treatment options are available for behavioral and mental health conditions. For example, psychotherapy (cognitive behavioral therapy) and medication (sertraline) are both efficacious monotherapies for various childhood anxiety disorders including social phobia, separation anxiety disorder, and generalized anxiety disorder (Walkup et al., 2008). Although participants in clinical trials are typically randomized to a treatment condition, clients in “real-world” clinical settings sometimes have

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a choice between two or more treatments. Shared decision making (SDM) is a model for client involvement for which clients take an active role in numerous aspects of treatment including goal setting, treatment planning, and decisions about treatment termination (e.g., Barry & Edgman-Levitan, 2012; Makoul & Clayman, 2006). With an emphasis on client values, the goal of SDM is for both the client and the doctor/clinician to discuss and agree upon treatment decisions. Reasons for giving patients an active role in choosing a treatment range from principled arguments (e.g., ethical obligation to involve patients in important decisions; Wensing & Elwyn, 2003) to testable hypotheses (e.g., client choice increases completion rates). In this meta-analytic review, we focus on several testable hypotheses surrounding potential measurable benefits of client preference. Specifically, we expect that client preferences are associated with greater satisfaction, higher completion rates, and better clinical outcome. In addition, we expect that preference effects might be moderated by one or more variables including type of choice (informed versus uninformed), setting (inpatient versus outpatient), and diagnosis.

Trends in Client Preferences

As treatment options are growing, so too is the proportion of patients who voice a preference for one treatment over another (Arora & McHorney, 2000; Chewing et al., 2012). A recent review of 115 studies on patient roles in medical decision making reported a time trend. Specifically, a higher proportion of patients from more recent studies preferred an active role in treatment decisions compared to older studies (Chewing et al., 2012). In studies prior to 2000, only 50% of patients reported a preference for having an active role in treatment decisions. In studies from 2000 and later, the proportion had risen to 71%. Recently, SDM has started to play an increasing role in mental health care (Patel, Bakken, & Ruland, 2008). This is a timely shift as treatment options become available in a field where patients often present with preferences. A recent meta-analysis reported that 75% of patients prefer psychological treatment (such as psychotherapy) over pharmacologic treatment for psychiatric disorders (McHugh, Whitton, Peckham, Welge, & Otto, 2013). Parents also tend to prefer psychological treatments (e.g. CBT) over pharmacotherapy for their children (e.g. Brown, Deacon, Abramowitz, Dammann, & Whiteside, 2007; Stevens et al., 2009).

Reasons behind the increasing proportion of patients who desire an active role in treatment decisions have been investigated in several studies, including age effects (e.g. Harvey, Kazis, & Lee, 1999), cultural shifts (e.g. Calsyn, Winter, & Morse, 2000), and easier access to health information. Harvey and colleagues (1999), for example, found that younger patients were more likely to prefer an active role in medical decision making compared to older patients. This age effect has been linked to cultural shifts such as the consumer movement (Calsyn et al., 2000) and also to increased patient education and increased availability of health information (Harvey et al., 1999). Patient choice has also recently been emphasized by new organizations such as the Patient Centered Outcomes Research Institute (PCORI; http://www.pcori.org).

Treatment Satisfaction, Completion, and Clinical Outcome

Client choice may have one or more measurable benefits, including higher client satisfaction, treatment completion, better adherence, and improved clinical outcome. Better adherence might include greater participation (in the case of psychotherapy; e.g. Krones et al., 2008), medication compliance (in the case of psychopharmacological treatment; e.g. Hamann, Cohen, Leucht, Busch, & Kissling, 2007), or fewer appointment cancellations and "no shows" (e.g. Kwam, Dimidjian, & Rizvi, 2010). Improved clinical outcome might include greater symptom reduction (e.g. Malm, Ivarsson, Allebeck, & Falloon, 2003; Calsyn et al., 2000) or increases in objective or perceived measures of quality-of-life (Stewart, Maher, Regshauge, Herbert, & Nicholas, 2007). These benefits may be linked to one another. For example, better adherence may lead directly to greater symptom reduction and increases in objective quality-of-life measures. Alternatively, increases in subjective quality-of-life measures might result directly from satisfaction with a particular treatment modality that is more acceptable to the client.

Preference Versus Active Choice

It is plausible that an active choice matters above and beyond receiving a preferred treatment (Leykin et al., 2007; Seligman, 1995). For instance, choice itself may have "curative powers" that positively influence clinical outcome (Seligman, 1995). This is an empirical question that can be tested by comparing "preference effects" to "choice effects." Preference and choice are generally examined using different research designs. In most studies examining client preference, clients are randomized to a treatment condition. Clients who happened to be randomized to their preferred treatment are then compared to those who were randomized to receive their non-preferred treatment, controlling for treatment effects. For example, Kwan, Dimidjian, and Rizvi (2010) assessed client preferences prior to treatment, and then randomly assigned them to receive psychotherapy or medication for the treatment of depression. A study by Dyck and Spinhoven (1997) applied a similar study design. Client preferences were evaluated prior to treatment, but participants were still subject to randomization. However, treatment groups were stratified so that the number of clients who received their preferred treatment was equal to the number of clients who received their non-preferred treatment. In contrast, some studies allow some clients, but not others, to actively choose a treatment. In these studies, clients are randomized to either be given a treatment choice or to be re-randomized to a treatment. Clients who were given a treatment choice are then compared to those who were randomized to a treatment condition, controlling for treatment effects. For example, Howard and colleagues (2010) conducted a study in which women were admitted to crisis houses or psychiatric wards. This study featured two participant arms: randomized and client choice. Participants in the randomized arm were randomly assigned to either psychiatric wards or crisis houses. Participants in the client choice arm actively chose their preferred service. In another depression study by Van and colleagues (2009), the same design was utilized. Approximately half of the participants were randomly assigned to receive medication or therapy. The remaining participants chose their preferred treatment.

Informed Versus Uninformed Preferences and Choices

Does it matter whether or not a choice is preceded by information or education about each of the treatment options? Client preferences are often assessed without any accompanying psychoeducation or decision support. For example, Dunlop et al. (2012) conducted a study in which clients diagnosed with major depressive disorder were asked to indicate their preferred treatment by a single question on a questionnaire. In these instances, clients' choices may be influenced by several variables including perceived efficacy, convenience, or stigma. For example, many parents of children with anxiety prefer psychotherapy over medication as a treatment option (Brown et al., 2007). In other cases, clients are given a choice along with psychoeducation about each treatment option or decision-support tool. For example, clinicians in a study conducted by Whelan and colleagues (2004) were randomly assigned to either provide treatment as usual or to utilize a decision board that was designed as a tool to inform clients of treatment options. Increasingly, decision-support tools are being used to help clients make informed treatment (e.g., Cunich et al., 2009; DuBenske, Gustafson, Shaw, & Cleary, 2010). A Probability of Treatment Benefit (PTB) chart, for example, can be used to summarize the expected benefits and risks of one more or treatments in percentage values that can be easily understood by patients (Beidas et al., 2014; Lindhiem, Kolko, & Cheng, 2012).

Treatment Choice Versus Ongoing Shared Decision Making

Client choice is sometimes operationalized as a one-time decision between treatment options. For example, clients in a study by Mergl and colleagues (2010) were randomly assigned to a medication condition, a psychotherapy condition, or a patient choice condition. In the patient choice condition, patients made a single decision about which treatment they received. In other cases, patients are involved in important decisions throughout the course of treatment. For example, Bieber and colleagues (2006) compared a SDM intervention to an information control group. Regardless of randomization results, all participants were offered the same evidence based treatment. During the initial consultation, both groups were also provided information about the condition. Participants who were randomized to the SDM group met with a physician who was trained in the practice of SDM. These physicians worked to build a therapeutic alliance that would help clients cope with difficult situations, handle emotional issues, and remain involved in the decision making process.

Differential Importance for Different Disorders

Finally, client choice might be relatively more important for some disorders or conditions compared to others. The importance of client preference has been examined in the context of treatments for a very wide range of conditions from serious psychiatric disorders (e.g. schizophrenia; Hamann, Cohen, Leucht, Busch, & Kissling, 2007) to more common mental health disorders (e.g. depression, Lin et al., (2005); anxiety, Berg, Sandahl, & Clinton, 2008). In addition, client choice has been examined in the context of medical conditions for which treatment often involves a substantial behavioral component (e.g., diabetes, obesity, cardiovascular health; Edwards et al. 2004; Stewart, Maher, Regshauge, Herbert, &

Nicholas, 2008). The relative benefit of assessing patient preferences for specific types of diagnoses and conditions, many of which offer distinct treatment options, is still unknown.

Current Study

In the current study, we examined several aspects of client choice using a meta-analytic approach. We were primarily interested in estimating the effects of client preference on treatment satisfaction, completion, and clinical outcome. We were also interested in exploring, a) whether an active choice matters above and beyond receiving a preferred treatment, b) whether an informed choice matters more than an uninformed choice, c) whether ongoing shared decision making matters more than a one-time treatment choice, and d) whether client choice is more important for some disorders or conditions than others. Although we were primarily interested in client preference as it relates to mental/behavioral health interventions (i.e. psychotherapy or psychopharmacology), we included other interventions and conditions (e.g. cardiovascular disorders, breast cancer) in order to examine whether preference effects are unique to mental/behavioral health interventions.

We are aware of one other meta-analysis (26 studies) on the topic of client preference (see Swift & Callahan, 2009). This earlier study reported modest preference effects on treatment drop-out (*OR* = .58) and clinical outcome (*r* = .15). The current study differs from this earlier meta-analysis in several key ways. First, the two studies differ in terms of inclusion/exclusion criteria. Notably, the current meta-analysis included studies that measured treatment satisfaction in addition to clinical outcome. Second, the current study examined whether preference effects differed between treatments for psychological disorders compared to treatments for other medical conditions. Finally, and perhaps most significantly, the two studies differed in terms of moderator variables that were examined. In particular, the current study examined novel potential moderators including psychoeducation (informed versus uninformed), setting (inpatient versus outpatient), and unit of randomization (client versus provider).

Method

Procedure

Eligibility criteria—The articles in this meta-analysis evaluated the effect of preference or choice on treatment satisfaction, completion rates, and clinical outcome of treatment. Inclusion criteria included 1) randomization to study conditions, 2) the evaluation of preference or choice related to treatment, 3) the evaluation of the effect of choice or preference on satisfaction and/or clinical outcome, 4) translation into English, and 5) peer review or dissertation.

Study selection—Studies were identified through a search of all articles indexed in the database PsycINFO as of October 30, 2013 using the ProQuest search engine. An initial search of *shared decision making* and *preference* was conducted to establish a comprehensive set of search terms. The final search terms included *decision support tool, shared decision making, patient choice*, and *patient preference*. These terms were crossed with *treatment outcome, satisfaction, randomized, RCT*, and *outcome study*. The search

yielded 2,391 studies. Of these studies, 2,340 were excluded for one or more of the following reasons: 1) not evaluating client satisfaction or clinical outcome, 2) no randomization in the study design, 3) not evaluating treatment-related preference or choice, 4) not written in or translated into English, or 5) not peer reviewed or dissertation (i.e. book chapters). This resulted in 51 articles that were examined in greater detail. Of these 51 articles, two did not evaluate the effect of preference or choice of treatment, and twelve did not evaluate outcome or satisfaction.

Of the 37 articles that met all of our met inclusion criteria, two articles were found to include the same sample and measure of satisfaction. Only one of these articles was coded and included in this study, per protocol. In addition, six did not have the necessary data to compute effect sizes. We attempted to obtain the necessary data by contacting the corresponding or lead author for each of these six studies. Four authors responded with the necessary data by the time of the analyses. As a result, this meta-analysis included a final total of 34 articles (see figure 1). These 34 articles described 32 unique studies. Of these 34 articles, only 5 were included in the Swift & Callahan (2009) meta-analysis.

Coding—All 34 articles were coded by the second author and a subset of 8 articles (23.5%) was coded by the fourth author. For the study level coding, inter-rater agreement was 90%. For the effect size level coding, a spearman correlation of .90 was calculated. All coding discrepancies were resolved through conferencing between the first and second authors.

The following variables were coded (see Appendices A and B for the complete list of codes and operationalized definitions):

1. Sample descriptors: mean age, setting (inpatient or outpatient), and diagnosis of participants (depression, anxiety, schizophrenia, physical health disorder, several mental health disorders).
2. Research design descriptors: Total sample size, treatment group sample size, control group sample size, unit of randomization (whether clients or clinicians were randomized), study type (whether study examined the effect of choice or preference), and treatment type (whether choice/preference was in respect to a specific treatment or ongoing collaboration between the clinician and patient throughout treatment).
3. Nature of the treatment descriptors: psychoeducation (whether or not participants were provided with information prior to treatment), treatment effect (whether or not there was a statistically superior treatment, $p < .05$), and preference trends (whether or not more than 50% of participants preferred the statistically superior treatment, when applicable).

For preference effects on clinical outcome and satisfaction, Cohen's *d* effect sizes were calculated by following the guidelines and equations outlined by Lipsey and Wilson (2001). Reported means and standard deviations were the primary method of calculating the effect sizes of treatment satisfaction and clinical outcome. When means and standard deviations were not reported, alternative methods for calculating the effect sizes included *t*-values, F-values, chi-square values, proportions or frequencies, odds ratios, and beta values, as

presented in Lipsey and Wilson (2001). The preference effects on treatment completion were calculated as odds ratios using the proportion of participants who completed treatment for each condition. Two odds ratios were outliers that were "winsorized" to two standard deviations from the mean of all odds ratios prior to the analysis. All effect sizes from individual studies were weighted by the inverse of the variance.

For studies that included multiple measures for clinical outcome, effect sizes were calculated using guidelines suggested by Lipsey & Wilson (2001). When a manuscript clearly indicated a primary outcome measure, this measure was used to estimate the effect size. When an author did not indicate a primary measure, we chose the measure that was consistently utilized across the included studies. For example, the Hamilton Rating Scale for Depression is a psychometrically established measure of depression that was included in many of the depression studies. If neither of these approaches for selecting an effect size were feasible, effect sizes were calculated for all measures, and the average effect size was included in the overall meta-analysis.

The primary aims were to examine the overall effect sizes of client preferences on overall treatment satisfaction, completion, and clinical outcome. The secondary aims were to examine whether these effect sizes were moderated by study design (preference versus active choice), psychoeducation (informed versus uninformed), setting (inpatient versus outpatient), client diagnosis (mental health versus other), or unit of randomization (client versus provider). (See Appendix A for details on each moderator).

Data Analyses

Primary analyses—Separate meta-analyses were conducted using Lipsey and Wilson's (2001) macros for SPSS to examine effect sizes for treatment satisfaction (k = 14 effect sizes), completion (k = 15 effect sizes), and clinical outcome (k = 26 effect sizes). Each meta-analysis proceeded in several steps. First, an aggregate effect size (reported as *Cohen's d* for satisfaction and outcome and the natural log of the odds ratio for completion) was computed, and random effects models were utilized to assess the statistical significance of the aggregate effect size. Then, the Q homogeneity statistic was utilized to determine whether heterogeneity in effect sizes supported examination of moderators of effect size. The Q statistic has a chi-square distribution based on k - 1 degrees of freedom where k represents the number of effect sizes. A homogeneity Q statistic that is statistically significant suggests that the distribution of effect sizes is heterogeneous. When the distribution of effect sizes was heterogeneous, we individually evaluated potential moderator variables with the $Q_{between}$ statistic using maximum likelihood estimation. A statistically significant $Q_{between}$ supports the variable as a moderator of effect size heterogeneity.

Follow-up analyses—We conducted follow-up analyses to rule out the possibility that any preference effects might be artifacts resulting from a majority of clients preferring or choosing a superior treatment. Each study was coded to determine if one of the treatment options was statistically superior ($p < .05$) to the other(s) and, if so, whether or not a majority of clients preferred or chose the superior treatment.

Results

Client Preferences and Treatment Satisfaction

Table 2 shows the results of the meta-analysis for treatment satisfaction. Figure 2 summarizes the effect sizes for the individual studies in addition to the aggregate effect size. Across 14 independent effect sizes, the aggregate effect size was $d = .34$ ($p < .001$). This effect size falls between Cohen's definition of a 'small' effect size ($d = .20$) and a 'medium' effect size ($d = .50$). The *fail safe N* indicated than an addition 34 studies with null ($d = 0$) findings would be necessary to reduce the effect size to $d = .10$. The homogeneity *Q* statistic shown in the top row of Table 2 was statistically significant ($p < .001$), thus supporting follow-up tests of moderation. Effect sizes for moderator subgroups are only reported in Table 2 when three or more studies were included. As shown in Table 2, subgroup effect sizes for potential moderator variables tended to be highly variable.

Client Preferences and Treatment Completion

Table 3 shows the results of the meta-analysis for treatment completion. Figure 3 summarizes the effect sizes for the individual studies in addition to the aggregate effect size. Across 15 independent effect sizes, the aggregate effect size was $OR = 1.37$ ($p < .001$). This is equivalent to a Cohen's *d* of .17, which approximates to Cohen's definition of a 'small' effect size ($d = .20$). The *fail safe N* indicated that an additional 11 studies with null findings would be necessary to reduce the effect size to $d = .10$ (roughly equivalent to $OR = 1.20$). The homogeneity *Q* statistic shown in the top row of Table 3 was non-significant ($p > .05$), but subgroup effect sizes for potential moderator variables are shown in Table 3 for informational purposes. For moderators with a sizable number of effect sizes for each subgroup (e.g., choice vs. preference), effect sizes appeared to be highly consistent across subgroups. Effect sizes for moderator subgroups were only reported in Table 3 when three or more studies were included.

Client Preferences and Clinical Outcome

Table 4 shows the results of the meta-analysis for clinical outcome. Figure 4 summarizes the effect sizes for the individual studies in addition to the aggregate effect size. Across 26 independent effect sizes, the aggregate effect size was $d = .15$ ($p < .001$). This effect size falls near Cohen's definition of a 'small' effect size ($d = .20$). The *fail safe N* using Orwin's (1983) formula indicated that an additional 13 studies with null findings would be necessary to reduce the effect size to $d = .10$. The homogeneity *Q* statistic shown in the top row of Table 4 was non-significant ($p > .05$). Thus, there was not clear support to examine moderators of effect size heterogeneity, but subgroup effect sizes for potential moderators are shown in Table 4 for informational purposes. Effect sizes for moderator subgroups are only reported in Table 4 when three or more studies were included. For variables with a sizable number of effect sizes for each subgroup (e.g., choice vs. preference), effect sizes appeared to be highly consistent across subgroups.

Follow-up Analyses

Of the 32 studies, there were only two in which one treatment option was statistically superior to another, and only one in which the majority of clients preferred the superior treatment. This helps to rule out the possibility that the preference effects detected in this meta-analysis are artifacts resulting from a majority of clients preferring or choosing a superior treatment.

Discussion

The results of this study highlight the modest yet consistent effects of client preference on treatment satisfaction, completion, and clinical outcome. Specifically, clients who were involved in shared decision making, chose a treatment condition, or otherwise received their preferred treatment evidenced higher treatment satisfaction, increased completion rates, and superior clinical outcome, compared to clients who were not involved in shared decision making, did not choose a treatment condition, or otherwise did not receive their preferred treatment. Although the effect sizes were modest, they were statistically significant and consistent across a wide range of potential moderating variables. In addition, the effects were not accounted for by a majority of clients choosing or preferring a superior treatment.

To provide some context for the magnitude of these preference effects, it is useful to discuss these effects in the context of the broader psychological treatment outcome literature. Meta-analyses of treatment effects produce a broad range of effect sizes depending on the research question. Some of the effects sizes are large (d = .8 or greater), but large effect sizes are typically limited to comparisons of psychotherapeutic treatment to no treatment (Lipsey & Wilson, 1993; Smith & Glass, 1977). Comparatively modest effects, typically in the range of a medium effect size (d = .4 to .6), are often found when psychological treatment is compared to a placebo (Lambert & Ogles, 2004). However, when psychotherapeutic approaches were compared to well-designed placebo conditions that were “structurally equivalent” to the psychotherapeutic approach, the effect size favoring the focal therapeutic approach was small (d = .15; Baskin, Callen Tierney, Minami, & Wampold, 2003). Moreover, when meta-analyses have compared the efficacy of two or more established or “bona fide” treatments for a specific condition (e.g., CBT and interpersonal psychotherapy for depression), the effect sizes comparing treatment efficacy are typically small in magnitude and often non-significant (Cuijpers, van Straten, Andersson, & van Oppen, 2008; Wampold, Minami, Baskin, & Callen Tierney, 2002).

Several potential moderators of preference effects were examined in this study. Specifically, we examined whether preference effects were moderated by study design (preference versus active choice), psychoeducation (informed versus uninformed), setting (inpatient versus outpatient), client diagnosis (mental health versus other), or unit of randomization (client versus provider). Of particular interest in the context of ongoing debate (e.g. Leykin et al., 2007; Seligman, 1995), preference effects were comparable in magnitude regardless of whether clients were given an active choice of treatment or simply fortuitous enough to be assigned to a preferred treatment via randomization. This suggests that active choice does not have any added benefit above and beyond receiving a preferred condition.

Despite little overlap in studies with the Swift and Callahan (2009) meta-analysis as well as methodological and coding differences, the results of the two studies were consistent. Both studies consistently found modest preference effects for clinical outcome and treatment completion (*OR* = .58 for drop-out is equivalent to *OR* = 1.72 for completion). Although the effect size estimates differed slightly, the confidence intervals overlap, indicating consistent results. Both studies also found that preference effects were not moderated by client diagnosis. The current meta-analytic review both replicates and extends the Swift and Callahan study. Unique aspects of the current study include the inclusion of treatment satisfaction and the examination of novel potential moderators including psychoeducation (informed versus uninformed), setting (inpatient versus outpatient), and unit of randomization (client versus provider).

Mechanisms

The modest yet statistically robust effect sizes in the current meta-analysis underscore the need to explore mechanisms that may account for preference effects. Perspectives on mechanisms that may account for the benefits of treatment preferences date back at least several decades to Jerome Frank's (1961) seminal assertion that the relationship between the therapist and client and other common elements across treatment approaches play a key role in treatment success. Subsequent studies by Frank and his colleagues demonstrated that patients with positive expectancies about their treatment have better therapeutic outcomes and better adherence to treatment regimens (Stone, Frank, Hoehn-Saric, Imber, & Nash, 1965). These positive expectancies can be built in part by the therapist learning about the patient's expectations about therapy, attitudes and beliefs about therapy, and what type of treatment they expect to receive. The therapist then tailors the therapeutic process to the individual client, thus increasing their positive expectancies about therapy and enhancing the likelihood of better outcomes. In addition, a few of the studies included in this meta-analysis, and several other recent studies which did not meet inclusion criteria, have also explored and/or speculated on the potential mechanisms by which treatment preferences affect clinical outcome. The potential mechanisms with recent empirical support include therapeutic alliance (e.g., Elkin, Yamaguchi, Arnkoff, Glass, Sotsky, & Krupnick, 1999; Iacoviello et al., 2007; Kwan et al., 2010), compliance/adherence (e.g., Sterling, Gottheil, Glassman, Weinstein, & Serota, 1997), and enhanced patient-provider communication (e.g., Kumar et al., 2010). It should be noted that these constructs are not entirely distinct from one another. For example, patient-provider communication could be considered one facet of therapeutic alliance.

Therapeutic alliance is a reliable predictor of clinical outcome (Martin, Garske, & Davis, 2000), and a likely candidate for the mechanism by which treatment preference influences clinical outcome. A meta-analysis of 79 studies examining the effect of therapeutic alliance on treatment outcome estimated the effect size at $r = .22$ (Martin et al., 2000). (This is equivalent to Cohen's $d = .45$.) In support of its potential mediational role, several studies have shown that treatment preferences affect therapeutic alliance. Specifically, patients who receive a preferred treatment may be more likely to have a stronger therapeutic appliance with their provider compared to patients who receive a non-preferred treatment, perhaps as a result of the clients entering treatment with a more positive outlook about the approach that

impacts the therapeutic relationship. For example, Iacoviello and colleagues (2007) reported that among depressed patients who expressed a preference for psychotherapy, therapeutic alliance increased throughout the course of treatment for patients who received their preferred treatment but not for those who received a non-preferred treatment (medication or placebo). However, among patients who expressed a preference for medication, therapeutic alliance did not increase during treatment regardless of which treatment they received. Kwan and colleagues (2010) also found that a mismatch between preferred and received treatment was associated with worse therapeutic alliance for the treatment of depression. Similarly, Elkin and colleagues (1999) concluded that receiving a treatment that is consistent with one's beliefs about the origin of one's distress and positive expectations about the treatment leads to early engagement (reduced early drop out) and an enhanced therapeutic relationship. We are not, however, aware of any studies that have directly tested whether therapeutic alliance mediates (fully or partially) the effect of treatment preference on clinical outcome.

Other, more specific mechanisms have been proposed, but with less or mixed support. Each of these more specific potential mechanisms can also arguably be viewed as a single facet of therapeutic alliance. Physician-patient congruence, for example, has been linked to positive outcome. In one study, physician-patient congruence, defined as the degree to which physicians and their patients share the same beliefs about the importance of patient participation in making treatment-related decisions, was associated with treatment outcomes (Jahng, Martin, Golin, & DiMatteo, 2005). Specifically, greater congruence was associated with better outcomes. It has also been suggested that clients receiving a preferred treatment may have better communication with their providers (Kumar et al., 2010). It is plausible that enhanced communication will lead to more relevant health communication being transferred from the patient to his or her provider, leading to better clinical outcome. Kumar and colleagues (2010) explored this in a study of 45 providers and 434 patients but did not find observable differences in patient-provider communication behavior between patients who preferred active versus passive roles in medical decisions. Finally, several studies examining the effects of treatment preferences on compliance or adherence have had mixed results, with some finding a positive association (e.g., Raue, Shulberg, Heo, Klimstra, & Bruce, 2009) but other studies yielding null results (e.g. Sterling et al., 1997). Overall, the most promising mechanism for the link between preference and outcome is the broad construct of therapeutic alliance, but additional studies will be needed to test a formal mediational model.

Clinical Applications

The results from this meta-analysis and review of the literature highlight the clinical benefit of assessing client preferences and providing treatment options when two or more efficacious treatment options are available. This will become increasingly important as more and more efficacious treatments become available in the years and decades ahead. Already, two or more efficacious treatment options are available for numerous diagnostic conditions including depression (e.g., Iacoviello et al., 2007) and anxiety (e.g., Walkup et al., 2008). Routinely, clients in mental health settings have the choice between psychotherapy, psychopharmacology, or a combination of both. In cases for which the treatment options have comparable efficacy, patient preference may be the deciding factor. In cases for which one treatment is superior to another, however, patient preference may need to be balanced

with the relative efficacy of each treatment option. Important factors include the preference strength as well as any difference in efficacy between treatments. Clinicians and patients can be aided by decision-support tools such as PTB charts (Beidas et al., in press; Lindhiem et al., 2012), which summarize information about likely benefits and risks of two or more treatment options, allowing clients to make informed decisions based on their personalized clinical profile and values.

Wensing and Elwyn (2003) provide important practical recommendations for providers who seek to adopt a SDM approach. They emphasize that methods used to incorporate patients' views should be known to affect outcome and that any measures used to assess patient preference should be assessed for validity. An exemplar is the development of the Willingness to Accept Life-Sustaining Treatment (WALT) instrument (Fried, Bradley, & Towle, 2002). The WALT is a reliable and valid measure of treatment preferences, developed for a range of diseases (e.g. cancer, heart failure, pulmonary disease) and related treatment options. The WALT may provide a useful framework for those seeking to develop similar measures of treatment preferences for other conditions, including mental health disorders, and their treatments.

Limitations and Future Directions

The current study was limited by a relatively small set of studies. This is particularly notable for our moderator analyses, for which subgroups were comprised of anywhere from 3 to 23 studies. This leaves open the possibility that the inclusion of more studies might result in significant *Q* statistics and significant moderator analyses. However, any significant moderator effects are likely to be small in magnitude. This manuscript is also somewhat limited by a narrow definition of clinical outcome. Several meta-analyses have found that psychotherapy has a greater impact on measures of targeted outcomes (i.e. symptom reduction) than non-targeted, global measures (e.g., well-being; Minami, Wampold, Serlin, Kircher, & Brown, 2007; Baardseth et al., 2013; Bell, Marcus, & Goodlad, 2013). It is plausible that preferences might have a greater impact on non-targeted measures than targeted measures. Unfortunately, not enough studies included non-targeted measures to test this in the current study. In addition, we were not able to examine whether preference effects on clinical outcomes lasted beyond immediate post-treatment. Future research needs to identify the long-term impacts of the preference effect. Finally, studies included in this meta-analysis were somewhat heterogeneous. However, this issue was somewhat mitigated by coding important study differences and examining them as potential moderating variables.

Summary and Conclusions

Client preferences appear to have modest but reliable effects on treatment satisfaction, completion, and clinical outcome. Although modest in magnitude, these preference effects further appear to be consistent across moderating variables including study design, psychoeducation, setting, diagnostic condition, and unit of randomization. These findings highlight the clinical benefit of assessing client preferences, providing treatment choices when two or more efficacious options are available, and involving clients in treatment-related decisions when treatment options are not available.

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Appendix A

Study-Level Coding

Bibliographic reference (APA)

1. Study ID#. Assign a unique identification # to each study. Formatted as TX# (DEP 01, DEP 02, ANX 01, ANX 02, etc)

   CHO Choice

   PRE Preference

2. Paper #. Assign each manuscript a unique #. Number in order from 1-24.

3. Publication year (last two digits)

Sample Descriptors

1. Mean age of the sample at the beginning of the study (missing = 999)

2. Sample

   1. Adults

2. Children

3. Description of sample (eligibility criteria, severity of symptoms, etc)

4. Setting
    1. Inpatient
    2. Outpatient

5. Diagnosis of participants
    1. Depression
    2. Anxiety
    3. Schizophrenia
    4. Medical Conditions
    5. Several Mental Health Disorders

Research Design Descriptors

6. Unit of randomization
    1. Clients randomly assigned to treatment conditions
    2. Clinicians randomly assigned to treatment conditions and then clients clustered to clinicians.

7. Total sample size (start of study)

8. Treatment / Preference received group sample size (start of study)

9. Control / Preference denied group sample size (start of study)

10. No preference group sample size (start of study)

11. Choice or Preference
    1. Choice
    2. Preference

12. One time vs. Ongoing Choice
    1. Choice of treatment
    2. Ongoing collaboration

Nature of the Treatment Descriptors

13. Type of choice/preference made by the client
    1. Informed
    2. Not informed

14. Treatment Effect

1. No significant difference (p >.05) between treatments.
2. Significant difference (p < .05) between treatments.

15. Treatment Preference Trends
    1. No significant Difference (p > .05) between treatments
    2. Greater than 50% of participants preferred the statistically superior treatment.
    3. Exactly 50% of participants preferred the statistically superior treatment.
    4. Greater than 50% of participants preferred the statistically inferior treatment.

Appendix B

Effect Size Level Coding

1. Study ID#
2. Paper #
3. Effect size #. Assign each effect size within a study a unique #. Number multiple effect sizes within a study sequentially (e.g., 1, 2, 3, 4…)

Dependent Measure Descriptors

1. Measure type
    1. Clinical Outcome
    2. Satisfaction
    3. Completion

Effect size data

2. Type of data effect size based on
    1. Means and SDs
    2. t-value or F-value
    3. chi-square (df = 1)
    4. frequencies or proportions
    5. odds ratio
    6. Beta
3. Page number where data was found
4. When means and standards deviations are reported or can be estimated:

   a. Treatment / Preference received group sample size (NA = 999)
   b. Control / Preference denied group sample size (NA = 999)
   c. No preference group sample size (NA=999)
   d. Treatment / Preference received group mean (NA = 999)
   e. Control / Preference denied group mean (NA = 999)
   f. No preference group mean (NA=999)
   g. Treatment / Preference received group *SD* (NA = 999)
   h. Control / Preference denied group *SD* (NA = 999)
   i. No preference group SD (NA = 999)

5. When proportions or frequencies are reported or can be estimated:
   a. *n* of Treatment / Preference received group with a successful outcome (NA = 999)
   b. *n* of Control / Preference denied group with a successful outcome (NA = 999)
   c. *n* of No preference group with a successful outcome (NA=999)
   d. Proportion of Treatment / Preference received group with a successful outcome (NA = 999)
   e. Proportion of Control / Preference denied group with a successful outcome (NA = 999)
   f. Proportion of no preference group with a successful outcome (NA = 999)
   g. Proportion of Treatment / Preference received group that completed (NA = 999)
   h. Proportion of Control / Preference denied group that completed (NA = 999)
   i. Proportion of no preference group that completed (NA = 999)

6. When significance test information is reported:
   a. *t*-value (NA = 999)
   b. *F*-value (NA = 999)
   c. Chi-square value (NA = 999)
   d. Odds ratio (NA = 999)
   e. Beta (NA=999)

Calculated Effect Size

7. Effect size

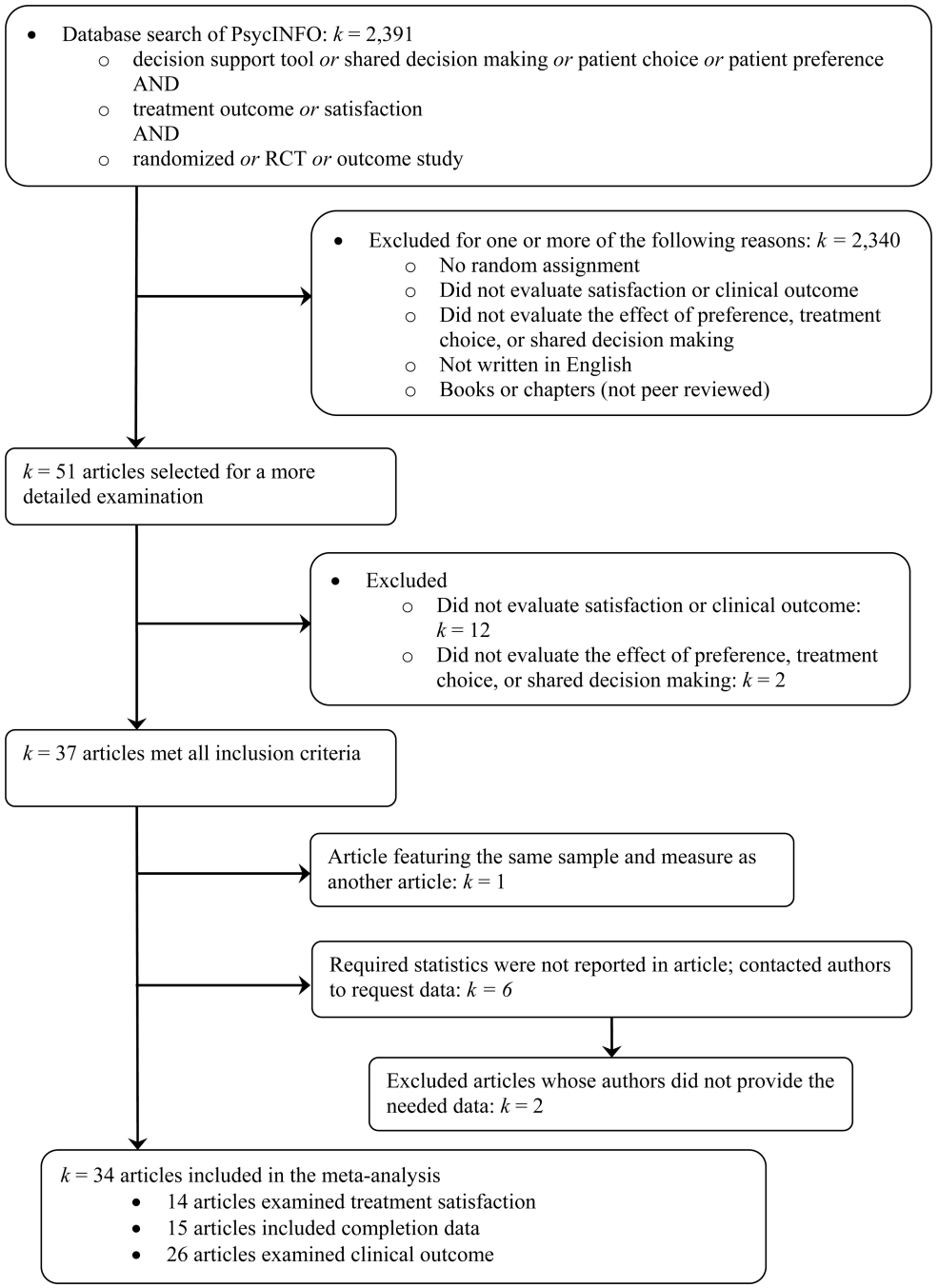

Figure 1.
Study selection flow chart.

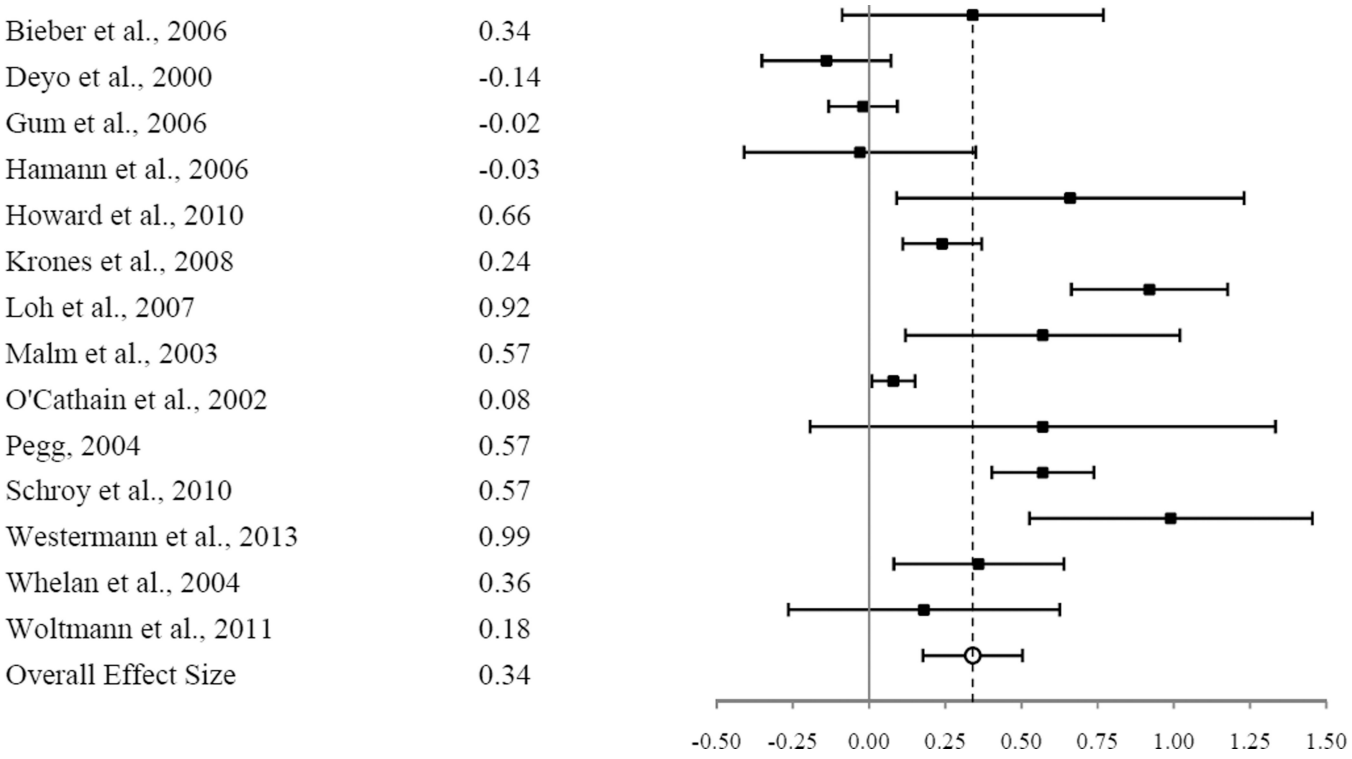

Figure 2.
Preference effect sizes (*d*s) for satisfaction. Error bars represent 95% CIs.

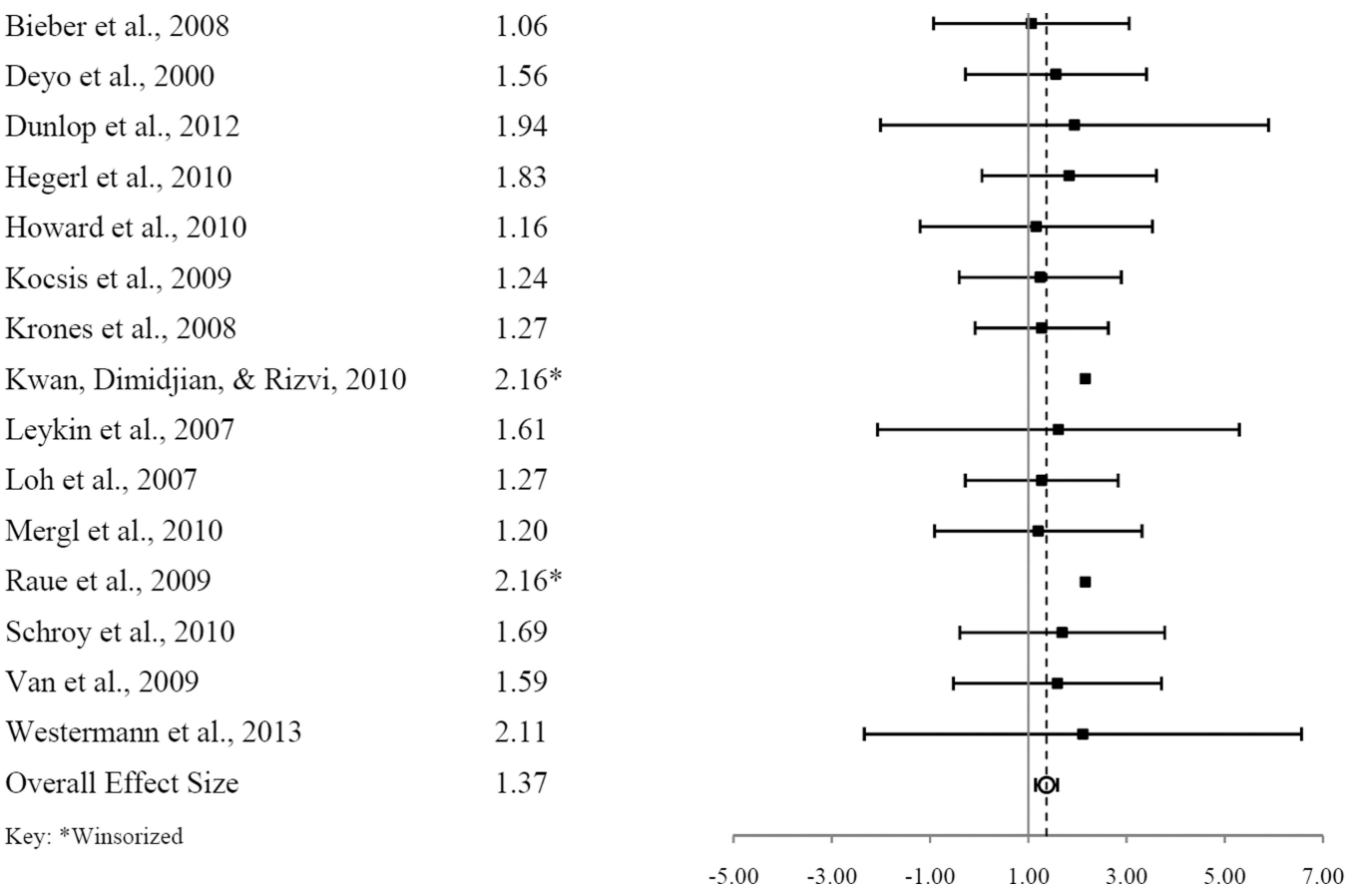

Figure 3.
Preference effect sizes (odds ratios) for completion. Error bars represent 95% CIs.

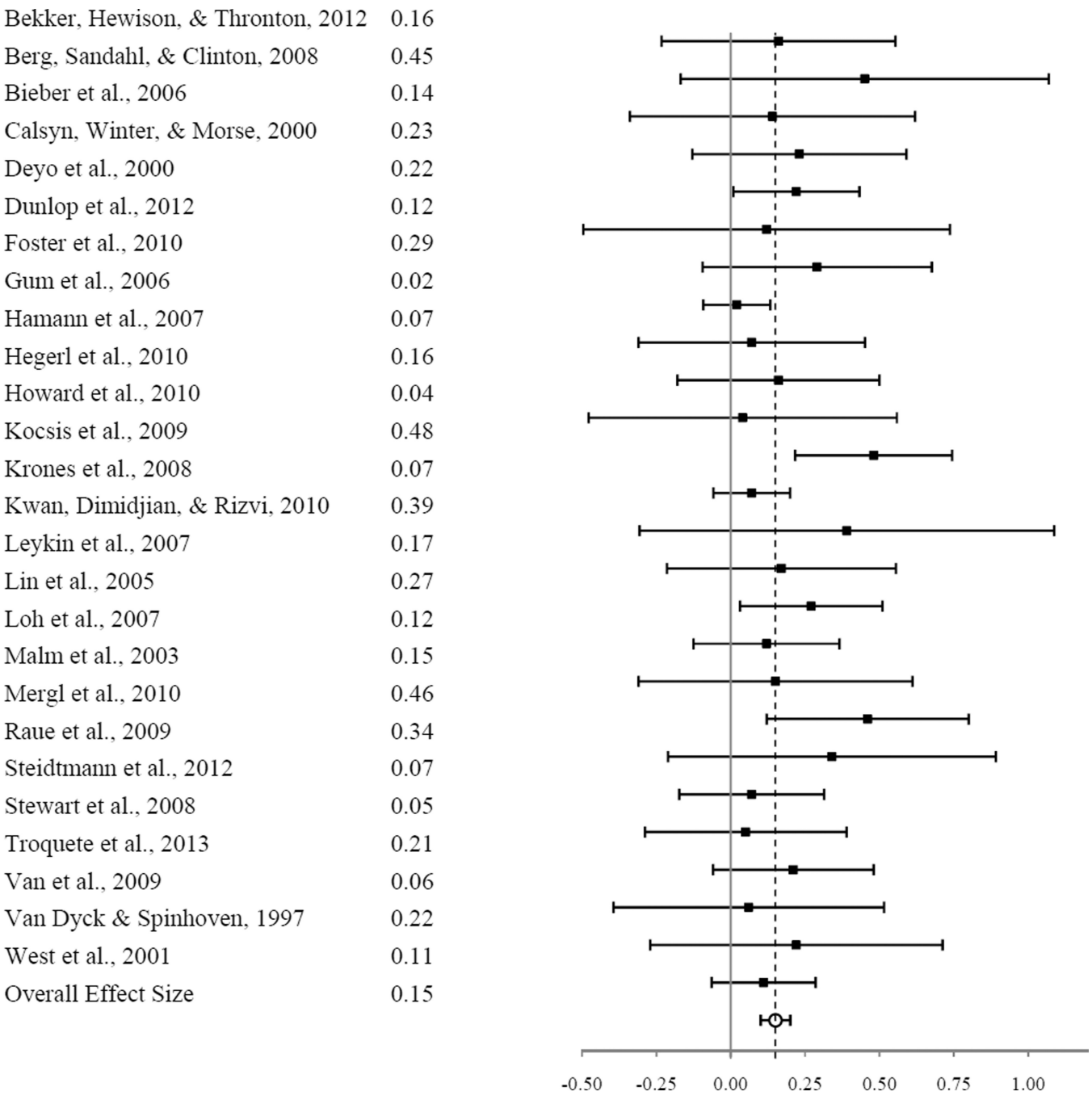

Figure 4.
Preference effect sizes (*d*s) for treatment outcome. Error bars represent 95% CIs.

Table 1

Moderators Included in the Meta-Analysis

Moderators	***n***
Study Type	
Active Choice	18
Preference Assessed	14
Choice Type	
Psychoeducation Provided (Informed)	19
No Psychoeducation Provided (Not-informed)	13
Participant Diagnosis	
Depression	12
General Medical	11
Variety	9
One Time vs. Ongoing Choice	
Choice of Treatment	19
Ongoing Collaboration / Shared Decision Making (SDM)	13
Unit of Randomization	
Clients Randomized	27
Clinicians Randomized	5
Setting	
Inpatient	5
Outpatient	27

Table 2

Meta-Analysis of Preference and Satisfaction

	k	N	d	95% CI	Q
Total	14	7347	.34***	.17 to .50	104.41***
Study Type					.76
Choice	12	6009	.37***	.18 to .56	
Choice Type					.37
Informed	12	5954	.37***	.17 to .56	
Participant Diagnosis					2.30
General Medical	7	5337	.26*	.02 to .49	
Variety	3	223	.60**	.19 to 1.02	
Therapy Choice					3.00
Treatment	3	1718	.08	−.25 to .41	
SDM	11	5629	.41***	.23 to .60	
Unit of Randomization					.00
Clients	10	2939	.34**	.12 to .56	
Clinicians	4	4408	.35*	.03 to .67	
Setting					2.99
Inpatient	5	3660	.13	−.15 to .41	
Outpatient	9	3687	.44***	.24 to .63	

* $p < .05$;

** $p < .01$;

*** $p < .001$

Table 3

Meta-Analysis of Preference and Treatment Completion

	k	N	OR	95% CI	Q
Total	15	4013	1.37***	1.16 to 1.61	3.78
Study Type					.00
Choice	10	3404	1.36***	1.14 to 1.63	
Preference	5	609	1.38	.90 to 2.12	
Choice Type					.14
Informed	9	3106	1.34**	1.10 to 1.63	
Non-informed	6	907	1.44*	1.05 to 1.99	
Participant Diagnosis					.15
Depression	9	1476	1.42**	1.11 to 1.80	
General Medical	4	2340	1.32*	1.04 to 1.68	
Therapy Choice					.52
Treatment	10	1567	1.46**	1.14 to 1.88	
SDM	5	2446	1.30*	1.04 to 1.62	
Unit of Randomization					.56
Clients	13	2476	1.45**	1.16 to 1.80	
Setting					.02
Outpatient	13	3517	1.36***	1.14 to 1.62	

* p < .05;

** p <.01;

*** p < .001

Table 4

Meta-Analysis of Preference and Treatment Outcome

	k	N	d	95% CI	Q
Total	26	6692	.15***	.10 to .20	23.08
Study Type					.01
Choice	13	3080	.16***	.08 to .25	
Preference	13	3612	.17***	.08 to .25	
Choice Type					.82
Informed	13	3333	.14**	.06 to .22	
Non-informed	13	3359	.19***	.11 to .28	
Participant Diagnosis					1.04
Depression	12	3160	.17***	.08 to .26	
General Medical	7	2427	.14**	.05 to .24	
Variety	3	817	.20*	.04 to .36	
Therapy Choice					.40
Treatment	19	4556	.18***	.11 to .25	
SDM	7	2136	.14*	.03 to .24	
Unit of Randomization					.44
Clients	23	4847	.18***	.11 to .24	
Clinicians	3	1845	.13*	.01 to .25	
Setting					.00
Inpatient	3	514	.16	−.03 to .35	
Outpatient	23	6178	.16***	.10 to .23	

* p < .05;

** p< .01;

*** p < .001