Patient Preference for Psychological vs Pharmacologic Treatment of Psychiatric Disorders: A Meta-Analytic Review

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ABSTRACT

Objective: Evidence-based practice involves the consideration of efficacy and effectiveness, clinical expertise, and patient preference in treatment selection. However, patient preference for psychiatric treatment has been understudied. The aim of this meta-analytic review was to provide an estimate of the proportion of patients preferring psychological treatment relative to medication for psychiatric disorders.

Data Sources: A literature search was conducted using PubMed, PsycINFO, and the Cochrane Collaboration library through August 2011 for studies written in English that assessed adult patient preferences for the treatment of psychiatric disorders. The following search terms and subject headings were used in combination: *patient preference*, *consumer preference*, *therapeutics*, *psychotherapy*, *drug therapy*, *mental disorders*, *depression*, *anxiety*, *insomnia*, *bipolar disorder*, *schizophrenia*, *substance-related disorder*, *eating disorder*, and *personality disorder*. In addition, the reference sections of identified articles were examined to locate any additional articles not captured by this search.

Study Selection: Studies that assessed preferred type of treatment and included at least 1 psychological treatment and 1 pharmacologic treatment were included. Of the 644 articles identified, 34 met criteria for inclusion.

Data Extraction: Authors extracted relevant data including the proportion of participants reporting preference for psychological or pharmacologic treatment.

Results: The proportion of adult patients preferring psychological treatment was 0.75 (95% CI, 0.69–0.80), which was significantly higher than equivalent preference (ie, higher than 0.50; $P < .001$). Sensitivity analyses suggested that younger patients ($P = .05$) and women ($P < .01$) were significantly more likely to choose psychological treatment. A preference for psychological treatment was consistently evident in both treatment-seeking and unselected (ie, non–treatment-seeking) samples ($P < .001$ for both) but was somewhat stronger for unselected samples.

Conclusions: Aggregation of patient preferences across diverse settings yielded a significant 3-fold preference for psychological treatment. Given evidence for enhanced outcomes among those receiving their preferred psychiatric treatment and the trends for decreasing utilization of psychotherapy, strategies to maximize the linkage of patients to preferred care are needed.

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Guidelines on the application of evidence-based practice emphasize the synthesis of empirical evidence and clinical expertise with patient values and preferences in the selection and implementation of treatments.[1,2] Patient preference becomes particularly important for guiding treatment decisions for psychiatric disorders for which both psychological and pharmacologic treatments demonstrate efficacy,[3–6] particularly given the absence of evidence-based decision rules (ie, treatment matching according to patient clinical or sociodemographic characteristics) for treatment selection. Consideration of patient preference may also inform policy-level decisions about allocation of resources (eg, funding for training) for the treatment of disorders without a clearly superior option in terms of efficacy or cost. Patient preference may also directly influence outcomes; a growing body of evidence suggests that providing patients with their preferred treatment is associated with better treatment retention and clinical outcomes.[7–9]

Despite the importance of patient preference, few studies have explored preferences for psychiatric treatments, and no accounting of the effect size of preferences across studies (ie, meta-analysis) has been published. The purpose of the current study was to conduct a meta-analytic review of the literature on patient preferences for psychological versus pharmacologic treatments for psychiatric disorders among adults. A thorough search of the literature was conducted, and potential moderating variables such as type of psychiatric disorder, sample composition (eg, age, sex, treatment-seeking), and study design variables (eg, the type of preference assessment) were evaluated. These major domains of variability in study design were examined to identify any systematic differences in results due to design features. Consistent with previous research,[7,10] we hypothesized that participants would report a preference for psychological relative to pharmacologic treatments.

As is evident below, despite a broad-based search strategy, our analyses were limited to studies of depression and anxiety and to a small number of general mental illness studies for which preference for treatment has been investigated. Our omnibus analyses included data from both treatment-seeking samples and unselected (ie, non–treatment-seeking) samples for which participants were asked to identify their treatment preference if they were to be diagnosed with a particular disorder. The perspectives of unselected samples are relevant to our meta-analysis given that, according to National Comorbidity Survey Replication data, more than half of those with a psychiatric disorder perceive barriers (either logistic or attitudinal) to seeking mental health care and, accordingly, did not utilize any mental health services in the previous

year.[11] Hence, understanding the preferences for treatment of such unselected samples is relevant for outreach and mental health literacy efforts to better connect individuals to care. To account for differences between those who were currently seeking treatment and the analog samples, we also conducted subgroup analyses to clarify the strength of effects across these subsamples.

Clinical Points

- Patient preference for the treatment of psychiatric disorders is a core component of evidence-based mental health care and has been shown to impact treatment retention and outcome.
- Studies across diverse settings indicate that, on average, patients prefer psychological treatment to pharmacologic treatment for depression and anxiety at a rate of 3 to 1.
- Consideration of patient preference, along with treatment efficacy and clinical expertise, may be important to optimizing outcomes in clinical settings.

METHOD

Search Strategy

The search engines of PubMed, PsycINFO, and the Cochrane Collaboration library were used to identify studies published in English through August 2011 that assessed patient preferences for the treatment of psychiatric disorders. The following search terms and subject headings were used in combination: *patient preference*, *consumer preference*, *therapeutics*, *psychotherapy*, *drug therapy*, *mental disorders*, *depression*, *anxiety*, *insomnia*, *bipolar disorder*, *schizophrenia*, *substance-related disorder*, *eating disorder*, and *personality disorder*. In addition, the reference sections of identified articles were examined to locate any additional articles not captured by this search.

Study Selection and Data Abstraction

Consistent with guidelines for reporting of meta-analyses of observational studies, we used broad inclusion criteria, and, rather than weight analyses using study quality ratings, we conducted sensitivity analyses relating study design features to outcomes.[12] From the studies identified using our search strategy, criteria for inclusion in the analysis were (1) use of a forced-choice assessment of participant preference for type of treatment for a psychiatric disorder, (2) inclusion of treatment options with at least 1 psychological treatment and 1 medication, and (3) study sample including adults with a specific psychiatric disorder diagnosis (or subsyndromal symptoms for a disorder) or unselected samples (non–treatment-seeking adults) in which participants were asked to identify their treatment preference if they were to be diagnosed with a particular disorder (ie, analog samples). Among studies using treatment-seeking samples, the assessment of treatment preference must have occurred prior to the selection of (or randomization to) treatment. Thus, studies of both treatment-seeking samples and unselected general or medical samples were included; nonetheless, results from each of these samples were also examined individually.

Studies were excluded if they met any of the following criteria: (1) studies of treatment acceptability, perceived utility/effectiveness, or satisfaction not including pretreatment preference assessment; (2) qualitative studies without a forced-choice preference question; and (3) studies that were not published in a peer-reviewed journal. Two authors (R.K.M. and A.D.P.) extracted data from the articles and checked the data for accuracy. Any inconsistencies in decisions regarding inclusion or data extraction were resolved by consensus decision.

For studies in which more than 1 psychological treatment (eg, group or individual) and/or more than 1 medication were presented, these options were collapsed under the broader headings of psychological or pharmacologic treatment. Several studies allowed participants to identify additional preferences (eg, no preference, combined psychological and pharmacologic treatment). For these studies, only participants expressing preference for psychological or pharmacologic treatment were included. Sensitivity analyses were conducted to examine differences in proportions between studies that employed a dichotomous forced choice and those that included additional preference options.

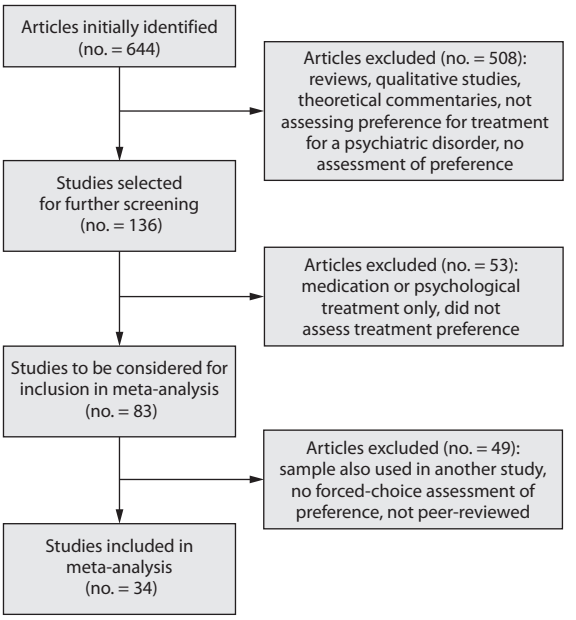
Data Synthesis

The dependent variable in this analysis was the proportion of participants expressing preference for psychological treatment. The proportion expressing this preference in each study was converted to the logit scale: $\text{logit}(p) = 1\text{N}(p/[1-p])$, and the variance of the logits were estimated as $\text{var}(\text{logit}[p]) = (1/\text{N}_1) + (1/\text{N}_2)$, in which N_1 and N_2 are the numbers preferring psychological treatment and medication, respectively, and $p = \text{N}_1/(\text{N}_1 + \text{N}_2)$. The logits were then combined using a random-effects model, estimated by the REML method with the SAS PROC MIXED procedure (SAS Institute Inc; Cary, North Carolina). Estimates of the population values of the mean logit and between-study variation in the logits were then converted back to the original probability scale. Heterogeneity among the study logits was assessed with the Cochrane Q test. When the studies are homogeneous, the sum of the squared and inverse-variance weighted deviations from the fixed-effect model estimate follow a χ^2 distribution with $k-1$ degrees of freedom. A significant deviation from this expected distribution indicates between-study heterogeneity and the need for a random-effects model that assumes that the underlying true logits follow an unknown (assumed normal) distribution with mean and variance to be estimated.

Sensitivity analyses were conducted by performing the same analysis in various subsets of the data of a priori interest and also by inclusion of covariates that may moderate the proportion of subjects preferring psychological treatment. These variables included treatment-seeking versus non–treatment-seeking (analog) samples, study assessment outcomes (ie, whether more than 2 treatment choices were presented), disorder of interest, gender, and age. For

the purpose of analyses, *treatment-seeking* was defined as patients' pursuing mental health treatment in either a primary or specialty care setting. For studies that recruited participants who were not seeking treatment for mental health (eg, patients screened as part of a primary care visit) and allowed participants to select no treatment, these studies were categorized as non–treatment-seeking. Given that the frontline treatment differs among disorders (eg, pharmacotherapy is the clear frontline treatment for schizophrenia and bipolar disorder, whereas pharmacotherapy and psychotherapy are both effective for anxiety and depressive disorders), our original analytic plan included subgroup analyses by psychiatric disorder. However, our search predominantly identified studies of depression and anxiety, and no studies of disorders for which pharmacotherapy is clearly the frontline treatment were found (see Trial Flow section in Results). Therefore, we estimated treatment preference in samples that indicated preference for treatment of depression versus any other disorder and between studies of depression and anxiety disorders versus other/unspecified disorders (ie, studies in which participants were asked to state preferences for mental health treatment generally).

Figure 1. Study Selection Process



RESULTS

Trial Flow

On the basis of the search methods used, 644 studies were initially identified and screened for inclusion/exclusion criteria. The final sample included 34 studies. For studies that did not present sufficient data in the report for analysis, authors were contacted to request this information. One study[13] was excluded because we were unable to obtain the needed data; results that were reported indicated that psychological treatment was preferred relative to medication for the treatment of depression. When more than 1 article reported results from the same dataset (eg, preliminary and final samples), we included only the report describing analyses conducted with the largest sample. The study selection process is presented in Figure 1.

Characteristics of the studies included in the analysis are presented in Table 1. The 34 studies included a total of 90,483 participants. Fifty percent of studies included treatment-seeking samples, and the most commonly examined disorder was depression (65% of studies), followed by posttraumatic stress disorder (17%), other or unspecified disorders (12%), and other anxiety disorders (6%). Thus, the vast majority of studies examined depressive or anxiety disorders, with a small minority examining mental health more broadly or examining other related conditions (eg, hypochondriasis).

Quantitative Data Synthesis

The Q test was highly significant ($Q_{33} = 1{,}674$; $P < .001$), indicating that the studies are not homogeneous. Therefore, the random-effects model was adopted over the fixed-effects model. Figure 2 shows the observed proportions in each of the 34 studies. Each proportion is enclosed in a 95% confidence interval, with standard errors computed using binomial variance. The population mean proportion that preferred psychological treatment was 0.75 (95% CI, 0.69–0.80), which is significantly higher than 0.50 ($P < .001$), the proportion that would indicate equal preference for psychological and pharmacologic treatment. There was substantial between-study variation in the estimated true logit: 95% of all true study-specific proportions were estimated to lie within the prediction interval (0.37–0.94).

Subgroup Analysis

The primary analysis was repeated within subsets of data characterized by studies that included more than 2 preference options (ie, participants could also choose an alternate treatment such as combined medication and psychological treatment: no. = 25 studies); studies that examined the treatment of depression only (no. = 22) and depression or anxiety (no. = 30); and treatment-seeking samples (no. = 17). These subgroups were examined as allowed by sample size.

The estimated population mean, the 95% confidence interval, and the P value reflecting whether the proportion is significantly different from equivalence (0.50) for each of these subpopulations are displayed in Table 2. For each subset of studies, the 95% confidence interval did not include 0.50, indicating that the proportion of participants preferring psychological treatment was significantly greater than the proportion preferring medication across all subsamples. Specifically, although the preference for psychological treatment was less pronounced in treatment-seeking samples relative to non–treatment-seeking samples ($P = .03$ for treatment-seeking when added as a covariate to the primary analysis; in a test of difference from equivalent preference, $P < .001$ for both subgroups), the subgroup of studies that included only treatment-seeking samples continued to demonstrate a significantly higher preference for psychotherapy than for pharmacotherapy (69%; $P < .001$) (see Table 2). Similarly,

Table 1. Characteristics of Studies Included in the Meta-Analysis

Study	Year	N	Disorder Studied[a]	Mean Age of Sample, y	Female Gender, %	Treatment-Seeking
Backenstrass et al[32]	2006	415	General	45.3	59	No
Becker et al[43]	2009	379	PTSD	32.0	29	No
Becker et al[44]	2007	166	PTSD	18.6	62	No
Brody et al[45]	2001	24	Depression	38.9	54	Yes
Chilvers et al[46]	2001	220	Depression	37.3	74	Yes
Churchill et al[47]	2000	895	Depression	41.0	68	No
Davidson et al[48]	2010	80	Depression	59.3	54	Yes
Deacon and Abramowitz[49]	2005	103	Anxiety	35.4	53	Yes
Dobscha et al[50]	2007	314	Depression	56.7	7	Yes
Dwight-Johnson et al[51]	2000	1,187	Depression	44.0	71	No
Dwight-Johnson et al[10]	2010	287	Depression	49.8	84	Yes
Fann et al[52]	2009	145	Depression	42.4	34	No
Feeny et al[53] study 1	2009	74	PTSD	31.8	100	No
Feeny et al[53] study 2	2009	31	PTSD	31.0	100	No
Feeny et al[54]	2009	324	PTSD	19.6	100	No
Fernandez y Garcia et al[30]	2011	976	Depression	NR	NR	No
Givens et al[41]	2007	78,753	Depression	NR	74	No
Goodman[55]	2009	455	Depression	31.6	100	No
Hodges et al[33]	2009	100	Depression	56.4	77	Yes
Iacoviello et al[56]	2007	75	Depression	40.0	53	Yes
Jaycox et al[57]	2006	444	Depression	17.2	75	No
Kocsis et al[31]	2009	429	Depression	45.0	65	Yes
Kwan et al[58]	2010	106	Depression	38.4	64	Yes
Leykin et al[59]	2007	174	Depression	39.6	59	Yes
Lin et al[60]	2005	335	Depression	57.0	4	Yes
Mergl et al[7]	2011	145	Depression	NR	NR	Yes
Ogrodniczuk et al[61]	2009	145	General	NR	NR	Yes
Patel and Simpson[62]	2010	89	OCD	41.0	NR	Yes
Raue et al[63]	2009	60	Depression	51.2	78	Yes
Unützer et al[64]	2003	1,797	Depression	71.2	65	No
Van et al[65]	2009	63	Depression	NR	NR	Yes
Walker et al[66]	1999	23	Hypochondriasis	47.0	83	No
Zafar et al[67]	2009	985	General	36.7	46	No
Zoellner et al[68]	2003	273	PTSD	19.4	100	No

[a]*General* refers to studies in which preference was assessed for psychiatric disorders generally and not for a specific diagnosis.
Abbreviations: NR = not reported, OCD = obsessive-compulsive disorder, PTSD = posttraumatic stress disorder.

the preference for psychological treatment was less pronounced in studies focused specifically on depression than in other studies ($P = .03$ for depression-focused treatment vs all other when added as a covariate to the primary analysis) but, again, continued to reflect a significant preference for psychotherapy over pharmacotherapy (70%; $P < .0001$) (see Table 2). Studies that evaluated preference for a specific psychiatric disorder (including depression, anxiety disorders, and hypochondriasis) also exhibited a preference for psychological treatment (75%; 95% CI, 0.69–0.81), which was not significantly different from studies that examined unspecified disorders ($P = .80$). The availability of alternative preference options (eg, combination therapy, watchful waiting/no treatment) did not influence ($P = .92$) the overall preference for psychological treatment.

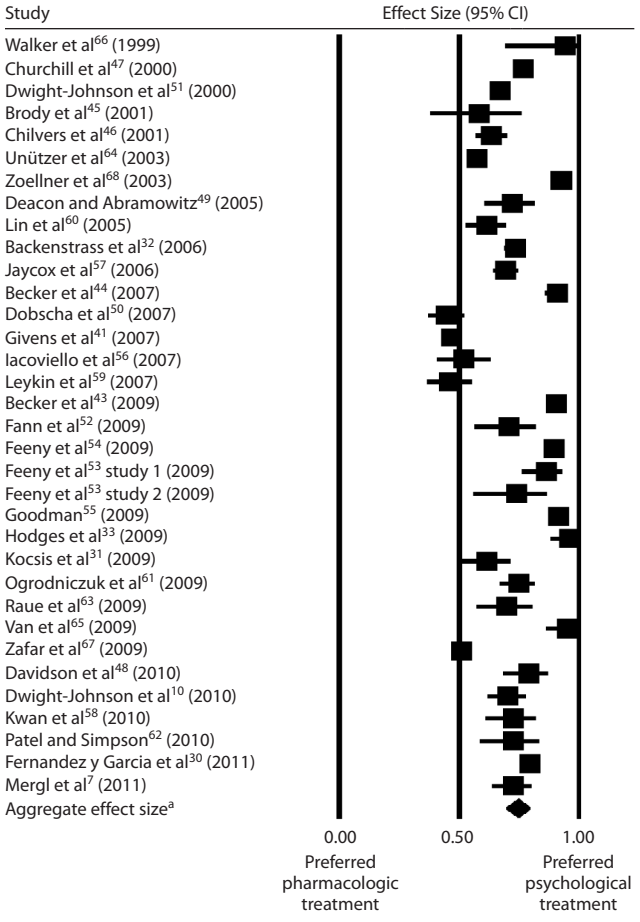
Mean age and proportion of women in each sample were added to the primary analysis as covariates. Mean age was significantly associated with the proportion who preferred psychological treatment ($P = .05$), such that younger samples were more likely to prefer psychological treatment than older samples. Gender was also significantly associated with the proportion who preferred psychological treatment ($P < .01$), such that samples with a greater proportion of women preferred psychological treatment at higher rates.

Publication Bias

A funnel plot of the observed logits versus the reciprocals of their variances (not shown) was examined as a check for patterns consistent with possible publication bias. Asymmetry of the plot was observed, with the most precise (ie, small variance) studies tending to have logits near zero (ie, proportions near 0.50). The large study by Givens et al[41] in particular fit this pattern; however, the rest of the data also conformed to this pattern. In a set of homogeneous studies free from publication bias, this plot should have the appearance of a symmetrical inverted funnel that converges near the estimated common effect size (logit of 0.69 for this set of studies). Asymmetry is consistent with a bias mechanism by which studies that would have appeared on one side of the plot (ie, those providing evidence opposite to the trend in the observed studies) tend to be missing. However, it is known that, when the studies are not homogeneous, asymmetry is not necessarily indicative of missing study bias.[14] Because this current set of studies displays marked departure from homogeneity, the asymmetry of the funnel plot is not particularly informative regarding potential publication bias.

Therefore, to assess sensitivity to possible publication bias in the form of unpublished studies (of note, we did not include unpublished studies in the current analysis) that

Figure 2. Effect Sizes (proportions) and 95% Confidence Intervals for Preferences for Pharmacologic vs Psychological Treatment



[a]Aggregate effect size difference from equivalent preference is statistically significant ($P < .001$).

would support the hypothesis of preference for pharmacologic over psychological treatment, the primary analysis was repeated with the addition of *k* hypothetical studies with observed logits equal to −1.09 (ie, proportions equal to 0.25) and logit variances equal to 0.04. The proportion was chosen as the counter-null to the observed population average (ie, the value that supports medication as strongly as the actual data support psychological treatment). The variances of the logit of these proportions were chosen to be equal to the median logit variance among the observed studies and implies a sample size of N = 130 per virtual missing study. The addition of 22 of these virtual studies would be required to fail to reject the null hypothesis that the observed proportions of participants preferring psychological and pharmacologic treatment were equivalent (0.50). We therefore conclude that the overall preference for psychological treatment over medication is robust to publication bias.

DISCUSSION

This meta-analysis provides evidence that adults prefer psychological to pharmacologic treatment for unipolar depression and anxiety disorders. Across 34 studies that spanned primary and specialty care settings and also included non–treatment-seeking samples, participants were 3 times more likely to express a preference for psychological treatment. Although preference for psychological treatment was stronger in certain subgroups (eg, non–treatment-seeking samples and younger samples), all subsample analyses continued to show a significant preference for psychological over pharmacologic treatments.

Table 2. Subset Analyses of Proportion of Participants Preferring Psychological Treatment

Subgroups (no. of studies)	Mean	95% CI	P[a]
Treatment-seeking samples only (no. = 17)	0.69	0.61–0.77	< .001
Samples given > 2 treatment choices (no. = 25)[b]	0.75	0.68–0.80	< .0001
Samples expressing treatment preference for depression only (no. = 22)	0.70	0.62–0.77	< .0001
Samples expressing treatment preference for depression or anxiety only (no. = 30)	0.75	0.69–0.81	< .001

[a]*P* reflects significance of difference from equivalent preference (ie, difference from 0.50).
[b]Refers to studies in which participants could choose an alternate treatment to psychological or pharmacologic treatment (eg, combination therapy or exercise).

According to the tenets of evidence-based practice, without evidence for the superiority of one treatment over the other, patient preference should guide selection of treatment.[1,2] Results of meta-analytic reviews suggest that pharmacologic and psychological treatments studied in clinical trials for the treatment of depression and anxiety achieve comparable outcomes.[6,15–19] Given comparable outcome data, the preference data support empirically based practice decisions in favor of greater rates of selection of psychological treatment for these disorders. Interestingly, recent patterns of treatment utilization reflect the opposite pattern. The past 10 years have seen a substantial increase in the prescription of antidepressant medications, which surpassed all others as the most commonly prescribed class of medication in the United States in 2005.[20,21] There is also evidence of a concurrent decrease in the number of patients receiving psychological treatment.[21] However, the available data on patient preference, efficacy, and cost-efficacy for depression and anxiety do not support this trend[22–24] and imply that many patients are not engaged in their preferred treatment. Also, despite high rates of initiation of antidepressant pharmacotherapy for mood and anxiety disorders, adherence to these agents over time is generally poor.[25–27] It is not clear how much of a role initial preference for treatment plays in these adherence findings relative to other issues such as side effects, patient attitudinal variables, and provider characteristics.[27] In the absence of empirical studies on the topic, it is unclear why the shift toward pharmacologic and away from psychological treatment is occurring, although limited access to evidence-based psychological treatments certainly plays some role.[28,29]

Due to the limited number of studies that assessed preference for combination pharmacologic and psychological treatment, we were unable to examine this preference as part of the meta-analysis. Among studies that included combination treatment as an option, many respondents

expressed a preference for this option, which often,[30,31] but not always,[32,33] was preferred over each of the monotherapies. Although combination treatment is associated with additive benefits for some disorders,[34,35] in other disorders, it may be associated with either very modest benefit or no benefit,[36,37] despite higher cost.[24]

We were unable to conduct sensitivity analyses to examine differences among samples based on factors such as culture, race, and ethnicity. These are particularly important difference variables to consider given that access to treatment[38] and factors such as stigma[39] can vary substantially across these groups. Research on the acceptability of treatment for depression has suggested that African American and Hispanic respondents report lower acceptability of medication relative to white respondents.[40] Similarly, 1 study included in the current meta-analysis[41] found that African American, Asian/Pacific Islander, and Hispanic participants were more likely to report a preference for psychological treatment rather than medication relative to white participants. Further research is needed to understand the nature of these group differences and how these differences may impact access and decision-making in mental health care.

There are several limitations to the current study. First, the evaluation of preference for alternative options (eg, combination therapy) was not possible given the variability in methods across studies. It is unclear whether there would be differential preference for psychological versus pharmacologic treatment in studies with multiple preference options had participants been forced to choose between the two. However, sensitivity analyses indicated no significant differences between studies that offered more than 2 treatment options and those that used a forced-choice between psychotherapy and medication. Similarly, the settings and samples included in this meta-analysis were heterogeneous because we elected to maximize generalizability of findings. Sensitivity analyses indicated that, although there was some variability among these groups in the magnitude of preference for psychological treatment, the overall preference for this treatment was maintained across the subgroups studied.

We did not include unpublished studies in this review and meta-analysis. Although this choice had the potential to introduce publication bias, we elected to exclude unpublished studies to maximize the quality of studies selected (ie, only those identified by peer review to exhibit sufficient scientific rigor for publication). The studies included in this review did not consistently include data on illness severity, and, thus, we were unable to assess the association between severity of symptoms or urgency of treatment need and patient treatment preference. Examination of this and other related potential moderating variables is an important future direction for this line of research.

Estimates of publication bias, such as the Fail-Safe *N* test, have limitations and thus should be interpreted with caution. Nonetheless, across the studies in our review, only 1 yielded a significant effect size in the meta-analysis in favor of medication, suggesting that these results are robust. Because the studies in this area are predominantly focused on depression and anxiety, the generalizability of these results to other disorders is unclear. Our original aim was to include studies across the spectrum of psychiatric disorders; however, there were no published studies on patient preference for many psychiatric disorders or for co-occurring disorders. Future research examining preferences for other types of mental illness, in particular, the question of whether preferences vary on the basis of frontline treatment for disorders (eg, pharmacotherapy for psychotic disorders), is important for understanding potential discrepancies between efficacy and patient preferences.

Our meta-analysis was not able to address the important question of why psychological treatment is preferred over medication. In a qualitative study of preferences for treatment of posttraumatic stress disorder, beliefs about mechanisms of treatment (eg, talking to someone would help) and health concerns relative to medication were noted as reasons for individual preferences.[42] In our analysis, we found that the preference for psychotherapy was stronger among women and younger participants, which may reflect the influence of social-contextual factors on preference (eg, greater social acceptability of psychological treatment for women relative to men). Future research on factors that contribute to patient preference is needed to better understand how patients derive these preferences.

In summary, the results of this meta-analytic review indicate that approximately 75% of participants prefer psychological to pharmacologic treatment for depressive and anxiety disorders. This preference was observed independently across heterogeneous settings, capturing perspectives from treatment-seeking samples (in both primary and specialty care settings) as well as non–treatment-seeking samples. Patient preference is associated with improved treatment retention and outcomes[7–9] and is important for guiding treatment decisions when more than 1 effective treatment option is available, which highlights the importance of routine assessment of treatment preference and efforts to maximize access to preferred services.

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