



Has evidence-based psychosocial treatment for anxiety disorders permeated usual care in community mental health settings?



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ABSTRACT

Cognitive behavioral therapy (CBT), particularly when it includes an exposure component, is an empirically supported psychosocial treatment for anxiety disorders that has been shown to be highly efficacious, desirable to patients, and cost-effective. However, access to and receipt of exposure-based treatment CBT anxiety remains lacking despite these benefits. The current study reviewed electronic medical records at a large public outpatient psychiatry clinic in order to clarify what usual care for anxiety disorders entails, and to determine the extent to which effective psychosocial treatment is accessible to, and implemented with anxiety disorder patients. Database queries generated from the billing and medical record system at the Los Angeles County Adult Outpatient Psychiatry Clinic identified 582 patients presenting with an anxiety disorder diagnosis in a 6-month time frame. These patients' electronic medical records were reviewed using a standardized data collection form. Findings indicated that the majority of patients received pharmacological treatment for their anxiety. The majority of the psychosocial treatment delivered was supportive therapy. Among the minority of patients who did initiate CBT, an even smaller minority received treatment that included an exposure component, and those who did receive exposure likely received a sub-optimal dose. Understanding usual care delivery patterns is an important preliminary step to identifying and addressing barriers to optimal anxiety disorder treatment in adult community mental health settings.

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The President's New Freedom Commission (2004), the National Institute of Mental Health (Insel, 2009), and leading researchers (see Santucci, McHugh & Barlow, 2012) all highlight the concern that access to and receipt of evidence-based treatment (and in particular, psychosocial treatment) for mental health disorders remains shockingly low. Indeed, the Institute of Medicine (Kohn, Corrigan, & Donaldson, 2001, p.1) has characterized the low uptake of evidence-based practice as “not just a gap, but a chasm.” In particular, national surveys suggest that the dissemination gap for exposure-based treatment for anxiety disorders is particularly large (Hipol & Deacon, 2013; Weissman, Verdelli, Gameroff, Bledsoe, Betts et al., 2006).

Exposure-based treatment, which involves gradual confrontation with feared stimuli, is the treatment of choice for anxiety disorders (see Barlow, 2002). Either delivered as one component of

a multi-component cognitive behavioral therapy (CBT) package or as a stand-alone intervention, exposure-based therapy shows large and robust effects in efficacy studies (e.g., Butler, Chapman, Forman, & Beck, 2006; Chambless & Ollendick, 2001; Deacon & Abramowitz, 2004) as well as effectiveness studies in a variety of clinical settings (Roy-Byrne et al., 2010; Stewart & Chambless, 2009; Stuart, Treat, & Wade, 2000). Several studies have demonstrated that CBT for anxiety disorders is at least as effective as medication (primarily referring to SSRIs) in the short-term and shows superior effects in the long-term (Gould, Otto, & Pollack, 1995, 1997; Hofmann, Sawyer, Korte, & Smits, 2009; Roshanaei-Moghaddam et al., 2011). Further, CBT is superior to other forms of psychotherapy for the treatment of anxiety disorders (Tolin, 2010). Thus, many consider exposure-based CBT to represent the first-line treatment for most anxiety disorders (Arch & Craske, 2009; Barlow, 2002).

Exposure-based treatment represents the most scientifically supported psychosocial treatment for anxiety disorders, yet the

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majority of U.S. adults do not know it exists (Arch, Twohig, Deacon, Landy, & Bluett, *in press*; Gallo, Comer, & Barlow, 2013). Studies reveal that only 7% (Goisman, Warshaw, & Keller, 1999) to 11% (Young, Klap, Sherbourne, & Wells, 2001) of adults with anxiety disorders receive an appropriate, evidence-based psychosocial treatment for these disorders. Thus, there exist empirically supported psychosocial treatments for anxiety disorders but they remain largely inaccessible to the population that needs them.

Although some successful dissemination and implementation efforts have been made in community mental health settings for children (Chorpita, Taylor, Francis, Moffitt, & Austin, 2004; Cohen & Mannarino, 2008; Weisz et al., 2012), the vast majority of adults in community mental health settings do not have access to these evidence-based psychosocial treatments. This lack of access is particularly striking when considering that: (1) effective psychosocial treatments are more cost-effective than pharmacological interventions (Otto, Pollack & Maki, 2000; Roberge, Marchand, Reinharz, Marchand, & Cloutier, 2004); and (2) across every study in which adults are provided education and choice about evidence-based treatments for anxiety, the vast majority prefer exposure-based psychosocial treatment over medication treatment of anxiety (e.g., Arch, 2014; Deacon & Abramowitz, 2005; Feeny, Zoellner, Mavissakalian, & Roy-Byrne, 2009). Lacking knowledge of exposure-based treatment, adults in our communities with anxiety disorders cannot make informed decisions about their mental health care. They then risk investing time and resources on less effective or ineffective treatments (Lilienfeld, Lynn, & Lohr, 2003). In that most adults served in community mental health settings are low-income, they especially cannot afford to invest their limited resources in sub-optimal treatment.

If patients are not receiving exposure-based CBT for their anxiety disorders in community mental health practices, what are they receiving instead? How often are they offered CBT, and how often do they actually undergo a therapeutic dose of CBT with an exposure component in particular? Although large-scale CBT (and particularly exposure) dissemination efforts are lacking in adult community practices (with the exception of the Veterans Administration; Cook et al., 2013; McLean & Foa, 2013), smaller-scale training and dissemination efforts may be taking place in naturalistic ways (i.e., not in the context of a large-scale, funded research project) and permeating typical care in clinical settings. However, we know very little about the actual practices and patterns of treatment delivery in these settings. In order to set priorities for identifying targets to improve practices (e.g., training, addressing systemic or environmental barriers), we must first understand on a more detailed level what patients at community mental health centers are receiving for their anxiety disorder treatment. A better understanding of the patient population and the treatments they are receiving may help to develop a framework for understanding the factors that contribute to this research-to-practice gap by uncovering barriers to successful dissemination and implementation of evidence-based psychosocial treatment for anxiety disorders.

Our overarching goal is to clarify what usual care for anxiety disorders entails at an adult community mental health setting in order to empirically examine the extent to which CBT is accessible to and implemented with low-income adults suffering from anxiety disorders in community mental health settings. We aim to contribute to knowledge that can be used to understand the broader challenges of implementing CBT for anxiety disorders in these settings. The current study thus aims to address several unanswered questions about anxiety disorder treatment delivery and patterns of care within adult community mental health settings. First, we aim to describe the patient characteristics, particularly anxiety disorder diagnoses, at a large, urban, county-funded

psychiatry clinic serving thousands of diverse, low-income patients. Second, we aim to elucidate the nature and course of the treatments received by the patients in this clinic. Specifically, we aimed to answer the following questions: (1) What do low-income, predominantly minority adult patients presenting at a large, urban community mental health clinic receive for their anxiety disorder treatment? (2) How often do they initiate CBT and for how long do they continue a course of treatment? (3) How often does CBT include an exposure component? We hypothesized that the majority of patients with anxiety disorders would receive pharmacotherapy and supportive therapy and that only a minority of patients would receive CBT. We also hypothesized that even among the minority of those who received CBT, few to none would receive exposure, arguably the most effective component of CBT treatment.

1. Methods

1.1. Participants

Electronic medical records (EMR) reviewed were those of patients ($N = 582$) at the Los Angeles County Adult Outpatient Psychiatry Clinic (AOPC) who (a) visited the clinic at least once from December 31, 2013–June 30, 2014 and (b) had at least one visit that was billed with any DSM-IV anxiety disorder diagnosis code [i.e., panic disorder with agoraphobia, panic disorder without agoraphobia, agoraphobia without panic attacks, specific phobia, social phobia, post-traumatic stress disorder (PTSD), generalized anxiety disorder (GAD), obsessive compulsive disorder (OCD), or anxiety disorder not otherwise specified (NOS)]. See below ([Patient Characteristics and Visits](#)) for descriptive information about the sample obtained from the chart review.

1.2. Clinic

The Los Angeles County AOPC serves thousands of diverse, low-income psychiatric patients. Clinicians include resident and attending psychiatrists affiliated with the University of Southern California, social workers, and psychologists. Third year psychiatry residents comprise a large percentage of the workforce at the AOPC (approximately 75%), and receive basic CBT training and supervision during their time on the AOPC rotation. The 3rd year residents are also expected to carry a caseload of at least 2–3 CBT cases per year. Doctoral-level (PhD and MD) clinicians with expertise in CBT provide weekly, group supervision to residents on these cases as well as approximately 8 h of didactic training (as part of the residents' didactic lecture series) in CBT over the course of the one-year rotation. Didactic training includes basic skills training in CBT for a variety of psychiatric disorders, as well as a few disorder-specific lectures. Thus, this clinic is representative of other large county clinics but potentially has a larger percentage of clinicians receiving at least basic training and supervision in CBT given its role as a psychiatrist training clinic. Although other county clinics across the country have resident clinicians under similar circumstances, this requirement may not be representative of the average community clinic. The clinic has no formal policy encouraging the use of CBT but informally encourages scientifically supported treatment approaches. In sum, the targeted clinic likely represents a "best case scenario" for CBT delivery among county-based clinics serving similar patient populations.

1.3. Measures/data collection

Collection of all data in the Los Angeles County electronic medical record (EMR) system was approved by the institution's IRB. Data was collected via database queries generated from the billing

and medical record system and by a systematic chart review of AOPC notes in the EMR for all patients with an anxiety disorder diagnosis identified through the database query and seen between December 31, 2013–June 30, 2014. Charts reviewed were all part of the Los Angeles County EMR system. In order to standardize the time period under investigation across patients, we only examined visits during the 6-month time frame for each patient, even if they were seen in the clinic before or after this time period.

A standardized data collection form was used to obtain all information (available upon request) for each patient's electronic medical record. To briefly summarize, we collected data about the type of treatment(s) (e.g., pharmacology, CBT, exposure, non-CBT psychotherapy) offered and accepted. We defined "offering" of a treatment as a note that indicated the provider proposed or suggested this treatment strategy as part of the treatment plan. We defined "accepting" the treatment as either documentation that the patient accepted this plan, or in the case of pharmacological intervention, that the prescription was documented in the "medications currently taking" section of the treatment plan if no documentation stating patient acceptance was explicitly made. We also distinguished acceptance of CBT and exposure from *initiation* of CBT and exposure. For example, a note may have documented that a patient agreed to CBT as part of the treatment plan but never came in for an initial CBT session. Thus, initiation of CBT (or exposure) was defined as at least one note documenting that at least one cognitive or behavioral strategy (or exposure specifically) was delivered. We also coded whether patients specifically requested CBT and exposure.

For patients who initiated CBT (including or excluding exposure), we recorded the number of sessions (individual and group coded separately) documenting that at least one cognitive and/or behavioral strategy was delivered and the number of sessions *in a row* in which CBT and/or exposure were documented. Raters all had at least a basic knowledge of CBT and its components and looked for key concepts, strategies, and phrases to identify sessions that included CBT. We coded these strategies liberally, as we expected the level of detail to vary across provider notes and erred on the side of including, rather than excluding the coding of a session. Common examples of cognitive restructuring phrases included "downward arrow," "cognitive restructuring of automatic thoughts," and "identified distortions." Common examples of exposure phrases included "conducted exposure," "encouraged exposure and response prevention," and "confronted feared situations."

1.4. Procedures

Chart review was conducted by a resident psychiatrist, one medical student, and two bachelor's level research assistants under the supervision of a licensed clinical psychologist and clinical researcher (first author KWT). Each chart reviewer was trained to a criterion of 80% reliability in the following manner: A previously reliably trained chart reviewer and the trainee completed independent chart reviews for three of the same charts and compared responses. Eighty percent of the trainee's responses had to match those of the reliable chart reviewer before a trainee was permitted to collect data independently. If the 80% criterion was not met, the trainee and reliable chart reviewer discussed the discrepancies and additional training was provided by the reliable reviewer as needed. In the rare cases when the trainee and reliable reviewer could not come to a consensus on how something should be recorded from the chart onto the data collection form, these issues were resolved by the first author (KWT) and additional training was provided. If reliability had not been met, the previously trained chart reviewer and new trainee would then collect data

independently for another three charts and the process would be repeated until the 80% criteria was met. Three raters achieved the 80% reliability criterion on the first round and one rater achieved 80% reliability on the second round.

2. Results

2.1. Patient characteristics and visits

Five hundred eighty two unique patients with an anxiety disorder diagnosis had at least one clinic visit during the 6-month sampling period. These patients ($M_{\text{age}} = 44.59$, $SD = 13.23$) were primarily female (71.3%), Hispanic (73.2%), and largely unemployed (49.5%) or of unknown employment status (14.1%). The majority of the sample (63.3%) had a high school degree or less education. On average, patients had 2.66 ($SD = 2.44$) diagnosed medical conditions (psychiatric and non-psychiatric) and were prescribed 4.39 ($SD = 3.65$) medications in total (psychiatric and non-psychiatric). During the 6-month sampling period, these patients came for an average of 4.55 ($SD = 5.87$; median = 3) visits to the AOPC at the Los Angeles County Hospital. Regarding the total number of clinic visits during the 6 month study period, 23.5% of the patients came for only one visit, 23.0% attended two visits, 40.7% came for 3–8 visits, 5.7% came for 9–12 visits, and the remaining 8.4% attended >12 sessions. On average, patients came in for 0.76 ($SD = 0.98$) visits per month during the 6-month time frame.

2.2. Patient diagnoses: principal overall diagnosis

According to the billing codes tied to the visits documented in the reviewed medical charts, the majority of these patients received a principal overall diagnosis of a mood disorder (57.9%), with the anxiety disorder coded as a secondary or comorbid diagnosis. The anxiety disorder was coded as the principal overall diagnosis in 34.5% of the cases. The remaining cases had a principal overall diagnosis of something other than an anxiety or mood disorder (4.0% psychotic disorder, 1.5% ADHD, and less than 1% for each of the other disorders coded).

2.3. Patient diagnoses: principal anxiety disorder¹

Nearly half (47.1%) of the sample of 582 patients with anxiety disorders had more than one anxiety disorder diagnosis coded, with 29.4% having 2 anxiety diagnoses and 17.7% having 3–6 anxiety diagnoses. Thus, we classified an anxiety disorder as the principal anxiety disorder if it was coded as either (a) the principal overall diagnosis billed for, or (b) the secondary diagnosis billed for (when a non-anxiety disorder was principal). We also looked across visits for each patient with multiple anxiety disorder diagnoses to ensure that the principal anxiety disorder diagnosis was also the most frequently billed anxiety disorder diagnosis for that patient. Using this combined strategy, we found that anxiety disorder NOS was the most commonly diagnosed principal anxiety disorder (35.2%), followed by PTSD (20.4%), GAD (17.4%), panic disorder without agoraphobia (11.0%), OCD (5.2%), panic disorder with agoraphobia (6.2%), social phobia (3.4%), specific phobia (0.9%), and agoraphobia without panic (0.3%).

¹ Note: We distinguish here the *principal overall diagnosis*, that is, the diagnosis considered primary from among all of the psychiatric diagnoses the patient may meet criteria for (discussed previously), from the *principal anxiety disorder*, that is, the anxiety disorder that is considered primary from among the various anxiety disorders the patient may meet criteria for, even if this principal anxiety disorder is the secondary diagnosis overall.

2.4. What kinds of treatment did these patients receive for their anxiety disorder?

We examined these data in two ways: first, we looked at anxiety disorder treatment among the entire sample of patients with an anxiety disorder (as a principal or secondary overall diagnosis; $N = 582$). Second, we selected only those with a *principal overall diagnosis* of an anxiety disorder (i.e., the sub-group of 201 patients who either had *only* anxiety disorder diagnoses or a principal overall diagnosis of an anxiety disorder, which was indicated as the first/primary diagnosis billed if non-anxiety disorders were also diagnosed), with the expectation that treatment delivery patterns (e.g., the extent to which CBT was implemented) may differ when the anxiety disorder is the presenting problem and thus, the likely focus of treatment. Because of the large standard deviations (SD) present in our descriptive analyses, we report not only means and SD s but also medians, in order to increase our ability to meaningfully interpret the findings.

2.4.1. Pharmacology

The majority of patients were offered medication specifically for the treatment of their anxiety disorder (89.3% in the full sample of 582 patients and 89.0% in the sub-sample of 201 patients with a principal anxiety disorder). Nearly all of those accepted the medication (86.9% and 87.1% in the full sample and principal anxiety disorder sub-sample, respectively). As shown in Fig. 1, we then examined the percentages of each major class of medication prescribed among those who initiated a pharmacological intervention for their anxiety disorder in the full sample ($n = 506$) and the principal anxiety disorder sub-sample ($n = 175$). Findings across both sets of analyses were nearly identical. Among those prescribed medication for anxiety, the average number of psychotropic medications prescribed specifically for anxiety in the full sample was 1.54 ($SD = 0.68$) and the average number of psychotropic medications for anxiety in the principal anxiety disorder sub-sample was 1.47 ($SD = 0.68$).

2.4.2. CBT

Fig. 2a shows the percentages in the full sample of patients with anxiety disorders ($N = 582$) and the principal overall diagnosis of an anxiety disorder sub-sample ($N = 201$) of those who were offered some form of CBT (either with or without the exposure component), accepted CBT, requested CBT, and actually initiated a course of CBT (i.e., had at least one individual or group session in

which the medical record indicated that CBT was delivered). Additionally, percentages in each sample of patients who were specifically offered the exposure component of CBT, accepted exposure, and requested exposure therapy are presented.

In the full anxiety disorder sample, regarding those who initiated a course of CBT during the 6-month window ($n = 77$), the average number of individual CBT sessions was 5.31 ($SD = 5.46$; median = 3), and the average number of group CBT sessions was 1.00 ($SD = 2.65$; median = 0). The average number of weekly CBT sessions attended in consecutive weeks (i.e., in a row) was 3.30 ($SD = 3.89$; median = 1).

In the sub-sample of patients with a principal overall diagnosis of an anxiety disorder who initiated a course of CBT ($n = 37$), the average number of individual CBT sessions for this sub-set of patients during the 6-month window was 5.38 ($SD = 6.64$; median = 3), and the average number of group CBT sessions was 1.54 ($SD = 3.27$; median = 0). The average number of weekly CBT sessions in a row was 3.59 ($SD = 4.76$; median = 1).

To understand which CBT components were being delivered, Fig. 2b reports the percentages of patients from among those initiating a course of CBT ($n = 77$ and $n = 37$ for the full anxiety disorder sample and principal diagnosis of an anxiety disorder sub-sample, respectively) who received at least one session using a major component of CBT for anxiety disorders (including exposure), per medical chart documentation. Across both the full sample and sub-sample, the vast majority of patients who initiated a course of CBT received cognitive restructuring. In contrast, as shown in Fig. 2a, just over one-quarter of patients in the full anxiety disorder sample who initiated a course of CBT received any exposure ($n = 22$). A somewhat larger percentage of patients with a principal overall diagnosis of an anxiety disorder who initiated CBT received at least some exposure ($n = 15$). Patients in the full anxiety disorder sample who initiated exposure therapy came for an average of 4.91 ($SD = 7.75$; median = 1) individual sessions and 3.18 ($SD = 5.18$; median = 0.5) group sessions per patient that documented at least some exposure therapy. In the sub-sample with a principal overall diagnosis of an anxiety disorder, patients who initiated exposure therapy attended an average of 5.87 ($SD = 8.63$; median = 1) individual sessions and 3.53 ($SD = 5.79$; median = 1) group sessions per patient that documented exposure in the chart.

Taken together, only 3.8% of the sample of 582 patients with anxiety disorders, and only 7.5% of the sub-sample of 201 patients with principal overall diagnoses of an anxiety disorder received one session or more of exposure-based treatment.

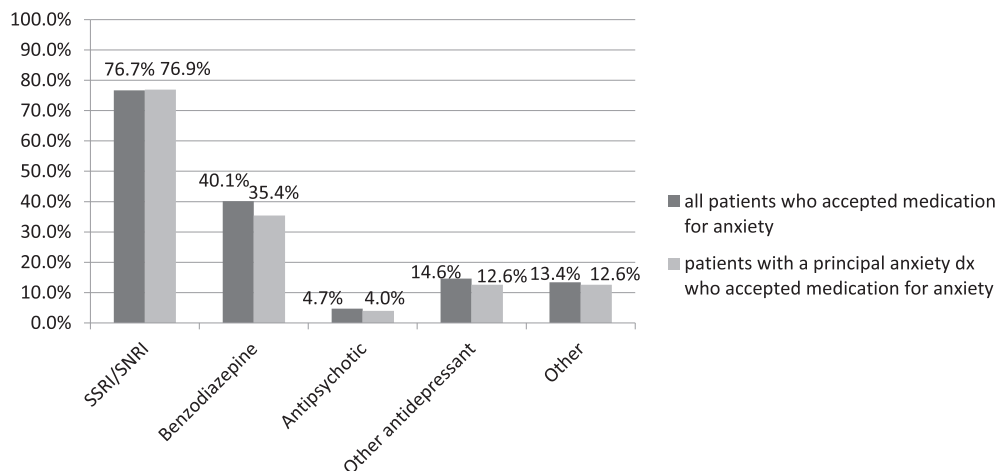


Fig. 1. Medication received by those who accepted pharmacological treatment.

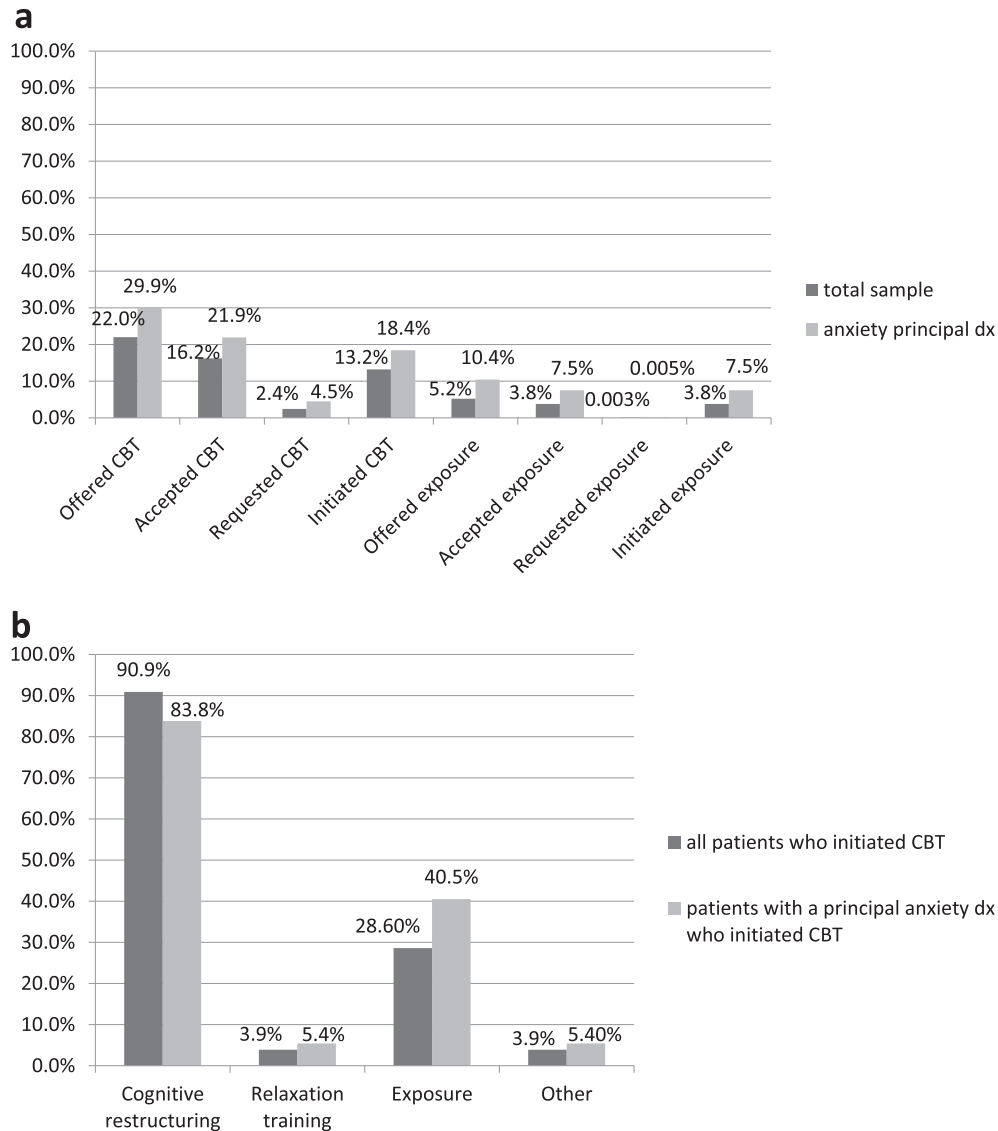


Fig. 2. a. CBT and exposure. b. Components of CBT Received among those who initiated CBT.

2.4.3. Other psychotherapy

In both samples, around two-thirds of the patients were offered a non-CBT form of psychotherapy (69.6% in the full sample and 62.7% in the principal anxiety disorder sample) and nearly all accepted it, with 67.9% of the full sample and 61.2% of the principal anxiety disorder sample accepting non-CBT therapy (reflecting $n = 395$ patients in the full sample and $n = 123$ in the sample of patients with a principal overall diagnosis of an anxiety disorder). As shown in Fig. 3, when we examined the percentages of each major type of non-CBT psychotherapy received by patients in each of the two samples (among those who initiated non-CBT psychotherapy), supportive therapy was by far the most common therapy delivered in both samples (336/395 in the full sample and 104/123 in the principal overall diagnosis of an anxiety disorder subsample).

2.4.4. Combination therapy

Given that the majority of patients received combination treatment (e.g., a mix of psychotherapy + medication), we compiled several of the most common treatment combination

categories. The prevalence of each therapeutic approach to the treatment of anxiety disorders in this sample is shown in Table 1. In both samples, the most prevalent treatment approach was medication + non-CBT psychotherapy.

2.5. Did treatment offerings differ by anxiety disorder diagnosis?

A series of chi-square analyses were conducted to examine whether there were differences between principal anxiety disorder diagnoses regarding the extent to which patients were offered particular treatments for their anxiety disorder. Neither use of non-CBT psychotherapy ($p = .26$) nor medication prescriptions ($p = .72$) differed by anxiety disorder diagnosis. In contrast, there was a significant difference between anxiety disorder diagnoses in the offering of CBT, $\chi^2 (N = 582, df = 8) = 42.45, p < .001$ and in the offering of exposure, $\chi^2 (N = 582, df = 8) = 138.76, p < .001$. As shown in Table 2, the majority of CBT was offered to patients with social phobia, specific phobia, and OCD, with very few patients with other anxiety diagnoses (particularly Anxiety Disorder NOS and PTSD) being offered CBT.

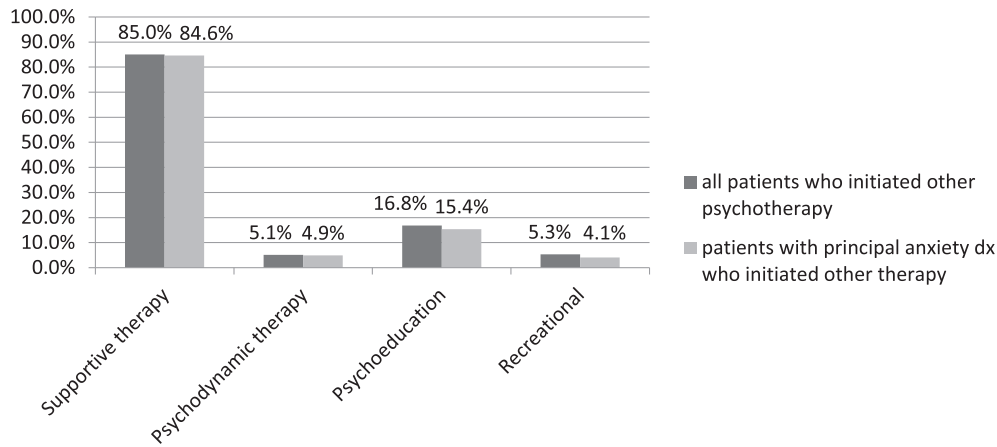


Fig. 3. Type of non-CBT psychotherapy received among those who initiated other therapy.

Table 1
Treatment combination type.

| Treatment | % Of full sample receiving treatment | % Of patients with anxiety as principal diagnosis receiving treatment |
|------------------------------|--------------------------------------|---|
| Meds + non-CBT therapy | 53.8 (n = 313) | 47.8 (n = 96) |
| Meds only | 23.9 (n = 139) | 24.9 (n = 50) |
| Non-CBT therapy only | 6.5 (n = 38) | 5.0 (n = 10) |
| CBT + meds + non-CBT therapy | 6.2 (n = 36) | 5.5 (n = 11) |
| Meds + CBT | 5.8 (n = 34) | 10.0 (n = 20) |
| None | 2.7 (n = 16) | 4.0 (n = 8) |
| Non-CBT therapy + CBT | 0.9 (n = 5) | 2.5 (n = 5) |
| CBT only | 0.2 (n = 1) | 0.5 (n = 1) |
| Total | 100.0 (N = 582) | 100.0 (N = 201) |

Table 2
Anxiety diagnoses of patients offered CBT and exposure.

| Anxiety diagnosis | % Offered CBT | % Offered exposure |
|------------------------------------|---------------|--------------------|
| OCD | 60.0 | 50.0 |
| Social phobia | 45.0 | 10.0 |
| Specific phobia | 40.0 | 20.0 |
| Panic disorder with agoraphobia | 30.6 | 8.3 |
| GAD | 24.8 | 2.0 |
| Anxiety NOS | 16.6 | 1.5 |
| Panic disorder without agoraphobia | 15.9 | 3.2 |
| PTSD | 15.8 | 1.7 |
| Agoraphobia without panic disorder | 0.00 | 0.0 |

3. Discussion

The current study assessed the extent to which exposure-based CBT is used to treat low-income adult patients with anxiety disorders in a large community mental health center. Consistent with hypothesis, the overwhelming majority of patients (nearly 90%) received pharmacotherapy for their anxiety disorders. Moreover, the majority of psychosocial treatment delivered was supportive psychotherapy, a practice that is not empirically supported for the treatment of anxiety disorders.

In contrast, CBT was delivered to a minority of patients (fewer than one-quarter of patients with a principal diagnosis of an anxiety disorder). Moreover, CBT included cognitive restructuring for nearly all patients who received CBT, yet the minority received the exposure component. Cognitive restructuring is an evidence-based component of CBT but arguably less essential to anxiety symptom reduction than exposure to feared stimuli (Craske et al., 2006). CBT

that included exposure (i.e., exposure-based CBT) was delivered to approximately one-quarter of the minority group of patients receiving CBT. Even when considering only patients with a principal anxiety disorder diagnosis who were presumably visiting the clinic primarily for the treatment of their anxiety disorder, fewer than half of this small group of patients with principal anxiety diagnoses who initiated CBT received at least one session of exposure. Considering how many patients received exposure-based treatment out of the total number of anxiety disorder patients seen in the clinic during the 6-month period, only 3.8% of patients with anxiety disorders (principal or secondary) and only 7.5% of patients diagnosed with an anxiety disorder as their principal overall diagnosis received any exposure-based treatment. Moreover, CBT was most often combined with medication(s), a practice associated with reduced efficacy of CBT (Arch & Craske, 2007; Barlow, Gorman, Shear, & Woods, 2000; Hofmann, Sawyer, Korte, & Smits, 2009; Roshanaei-Moghaddam et al., 2011; Westra & Stewart, 1998) and standing in stark contrast to the efficacy base enjoyed by CBT as a stand-alone treatment (see Barlow, 2002; Deacon & Abramowitz, 2004). Fewer than 1% of patients (in each sample) received CBT only for the treatment of their anxiety disorder.

Among the minority of patients who did receive exposure-based CBT, the dose of treatment was likely to be sub-optimal. That is, they received far fewer sessions on average than those of the protocols that are typically tested in clinical efficacy and effectiveness studies and form the basis for what is recommended in published manuals (i.e., roughly between 10 and 16 sessions). Interestingly, this was true even for patients with a principal anxiety disorder – the patients most in need of exposure-based treatment. Although we did not look at treatment outcome data and thus cannot rule out the possibility that patients discontinued CBT after 4–6 sessions due to clinically meaningful symptom improvement, these data generally suggest that the percentage of patients in community mental health centers receiving an adequate dose of exposure-based CBT for their anxiety disorder appears to be very small. Thus, efforts to identify predictors of attrition may inform the development of interventions to increase treatment adherence and retention. Additionally, these data are consistent with previous findings from naturalistic studies indicating that a very small fraction of patients receiving care for anxiety and other psychopathology in real-world clinics who begin CBT or other psychotherapy are retained in treatment long enough to receive an adequate dose, with patients receiving an average of approximately 4–6 sessions (Garcia, Kelley, Rentz, & Lee, 2011; Gibbons et al., 2011; Hansen, Lambert, & Forman, 2002). Thus, this growing body of research suggests that clinicians should be optimizing the

few sessions they have with patients by using brief interventions distilled to the most powerful treatment components. In the case of anxiety disorder treatment, this may mean eliminating relaxation and cognitive restructuring and delivering exposure only, or at least emphasizing exposure earlier in treatment. Indeed, brief cognitive and behavioral treatments for anxiety disorders have comparable efficacy to longer treatments (e.g., Clark et al., 1999; Öst, Alm, Brandberg, & Breitholtz, 2001; Öst, Hellstrom & Kaver, 1992), and “ultra” brief treatments (i.e., 5 or fewer sessions) that emphasize (or deliver only) exposure have demonstrated effects comparable to traditional CBT protocols and are associated with lower dropout rates than traditional CBT protocols (see Otto, Tolin, et al., 2012; for a review).

Taken together, we conclude that despite the existence of highly effective psychological treatments for anxiety disorders, their delivery is severely limited in community mental health settings, even in a more optimal community setting in which psychiatry residents are receiving exposure-based CBT training and supervision and are expected to carry a caseload of CBT patients. Thus, an average community mental health clinic without this training structure and requirement would likely be delivering even *less* exposure therapy to patients with anxiety disorders. This is particularly concerning given that low-income, minority patients prefer psychological treatments to medication (Arch et al., in press; Churchill et al., 2000; Dwight-Johnson, Sherbourne, Liao, & Wells, 2000, 2010), indicating that patient preferences among evidence-based options are not being met. Notably, the strong majority of patients who were offered exposure-based CBT initiated a course of treatment, indicating that these approaches are acceptable to most patients. Moreover, the acceptance rates were largely the same whether CBT was offered generally (which may or may not have included exposure) or whether exposure was specifically offered, indicating that patients appear to find CBT acceptable whether or not (or even if) it includes exposure. Despite preference for, and acceptability of exposure-based CBT for anxiety disorders among patients, almost no patients requested exposure therapy or CBT. A likely explanation is that most adults do not know that exposure-based CBT exists (Arch et al., in press; Santucci, McHugh, & Barlow, 2012), indicating a need to educate the public about these highly effective approaches so they can advocate for their own treatment preferences when visiting their providers.

When considering the percentages of patients offered CBT across the principal anxiety disorder diagnoses, we found that social phobia and OCD patients were most often offered CBT, whereas anxiety disorder NOS and PTSD patients were least often offered CBT. It is understandable in this particular clinic that patients with social phobia and OCD would be the most likely recipients of CBT, given that the clinic provides CBT groups for these two anxiety disorders. Thus, this finding may be sample-specific and caution should be taken in generalizing to other community-based clinics. Nonetheless, delivery of CBT in a group has a significant evidence basis for several anxiety disorders (see Bieling, McCabe, & Antony, 2009; Heimberg, & Becker, 2002; Telch et al., 1993) and is a cost-effective option for community mental health clinics (Lopez & Basco, 2015). However, these data indicate that, on average, patients are attending only a few group sessions. The high variability in the number of group sessions attended suggests that a minority of patients who begin a CBT group are attending frequently and receiving an adequate dose of treatment, but that most group members are likely not receiving an adequate dose of treatment. Thus, group delivery of CBT in these community mental health settings may be a promising option to provide access to CBT for a larger number of patients with anxiety disorders, but ensuring that patients receive an adequate number of group sessions represents an area to monitor more closely to better understand the barriers to

delivering an adequate and consistent course of group CBT for community patients.

In contrast to the relatively higher percentage of patients with OCD and social phobia who were offered CBT, few patients with anxiety disorder NOS and PTSD were offered CBT. This is particularly concerning given that these were the most common anxiety disorder diagnoses in this clinic sample. First, providers with minimal training and experience in CBT may not have the depth of understanding how cognitive and behavioral principles and components can be flexibly delivered to a patient with anxiety disorder NOS. In the absence of specific protocols for this disorder, providers may be inclined to simply prescribe medication or provide supportive therapy. This finding highlights the need for providers to be trained in transdiagnostic, flexible approaches to delivering components of CBT relevant across the anxiety manifestations (e.g., exposure, cognitive restructuring; Barlow, Allen, & Choate, 2004; Farchione et al., 2012). Second, there is a robust evidence base for delivering exposure-based CBT to patients with PTSD which has begun to be widely disseminated across the VA system (Cooke et al., 2013; McLean & Foa, 2013); yet, according to these data, it is rarely being delivered to adults in community mental health clinics. It is unclear why this diagnosis in particular was rarely treated with CBT. Emerging research indicates that providers worry about “re-traumatizing” PTSD patients with exposure (Deacon et al., 2013), a belief for which little systematic evidence exists beyond mild symptom exacerbation among a minority of patients in the first few exposure sessions (and this minority of patients nevertheless go on to improve as long as they remain in treatment; Foa, Zoellner, Feeny, Hembree, & Alvarez-Conrad, 2002). Similarly, panic disorder without agoraphobia also represented a common diagnosis under-treated with CBT in this sample. In contrast to the straightforward focus on delivery of *in vivo* exposure in the treatment of OCD, specific phobia, and social phobia, delivery of CBT for panic disorder additionally involves interoceptive exposure. Therapists may be less aware of interoceptive exposure or more challenged by it. Previous research has shown interoceptive exposure to be the single least used exposure technique (Hipol & Deacon, 2013), and to be associated with marked concerns about its safety even among therapists who use it (Deacon et al., 2013). Taken together, these findings may point to a training need for therapists in order to increase confidence and competence in treating anxiety disorders that require the use of multiple types of exposure strategies.

Greater understanding of the provider- and patient-level barriers to delivering exposure-based CBT in these settings, an area of growing interest (Gunter & Whittal, 2010), will inform educational and training “best practices” to improve community access to evidence-based treatment for adult anxiety disorders. Given that most dissemination efforts for anxiety disorder treatment in mental health settings (outside of the VA system) have focused on youth, we can study lessons learned from the youth literature in considering how best to tackle dissemination issues in community settings for adults. For example, Chorpita, Weisz and colleagues demonstrated that employing flexible, modular approaches to train community clinicians in evidence-based practices for anxiety disorders and beyond, led to superior clinician acceptability towards evidence-based treatment (Borntranger et al., 2009; Chorpita, Daleiden, & Weisz, 2005) and superior (youth) patient outcomes, relative to employing treatment manuals (Weisz et al., 2012). Notably, the modular treatment for anxiety disorders in these studies was exposure-based CBT. Their work suggests that successfully disseminating evidence-based treatment for anxiety disorders in community settings indeed requires an investment of clinician training but that if the delivery structure of such interventions can be made more flexible (e.g., modules rather than manuals), community clinicians may more successfully benefit

their anxiety disorder clientele, while still adhering to components and principles of evidence-based practice.

Finally, as noted earlier, given that fewer than 5% of patients with anxiety disorders requested CBT and fewer than 1% requested exposure, it is worth considering the possibility of marketing evidence-based anxiety disorder treatment to patients more directly. A burgeoning literature (Gallo et al., 2013; Santucci et al., 2012) draws upon the vast success of direct-to-consumer marketing by the pharmaceutical industry to make the case that marketing evidence-based psychotherapies directly to patients, even on a smaller scale, may help to raise public awareness of such treatments and create stronger patient demand for them.

This study represents the first to our knowledge that examines specific patterns of treatment delivery for anxiety disorders in a large community mental health clinic serving low income adult patients. However, there are some limitations of the study worth noting, which largely stem from practices that are common among community mental health clinics. First, we saw no evidence for the use of structured diagnostic interviews and very limited, inconsistent evidence regarding how clinicians arrived at diagnoses (e.g., which symptoms were met, etc.). We thus characterized anxiety disorder diagnoses based on billing codes for diagnoses; however, the reliability and validity of these diagnoses is unclear. Relatedly, although a significant proportion of anxiety disorder cases seen in real-world clinics may not conform to DSM diagnoses, it is also possible that anxiety disorder NOS was the most common anxiety disorder diagnosis due to inadequate diagnostic assessment. Nonetheless, our approach met our aim of characterizing the diagnoses made by clinicians in community mental health settings. Second, our knowledge of interventions offered and delivered was based on electronic medical chart review, and the level of detail in medical notes differed from one provider to the next. Thus, it is possible that interventions were delivered and not documented. Third, due to the very large number of charts reviewed, it was not feasible for raters to independently rate an additional 10% of charts to establish inter-rater reliability; however, our training procedures indicated high reliability and our data recording form was highly standardized. Fourth, the data were collected from a single clinic – albeit a large clinic serving low-income mental health patients in one of the nation's largest and most diverse urban centers – and thus it is possible that these findings would not fully generalize to other community mental health clinics such as those in socio-demographically different settings (e.g., rural areas) or those staffed primarily by other types of mental health professionals (e.g., masters' level clinicians). We thus recommend that these findings should be replicated across the country in distinct settings, including in primary care settings, where the majority of patients with anxiety disorders seek treatment (e.g., Stein et al., 2014).

Finally, we chose to only look at visits during a specified 6-month period of time in order to ensure that collection time periods were standardized across patients. As a result, we may have omitted the inclusion of some CBT sessions delivered for patients in this dataset prior to or after the time frame, particularly those who may have just started CBT near the end of the time period, or those who were finishing a course of CBT at the beginning of the time period. Thus, these findings represent a cross-section, or “snapshot” of a specific period of time meant to represent the typical patterns seen in this clinic for the treatment of anxiety disorders (and a duration of time that should be sufficient for a typical dose of CBT to be delivered) and should not be used to draw conclusions about a patient's entire utilization of mental health services over long stretches of time. It is worth noting that our data indicated that only a small number of patients initiated CBT in the final month of the time frame (i.e., June 2014; $n = 4$ in the full sample and $n = 1$ in the principal anxiety disorder sub-sample), suggesting most CBT in

this sample was fully underway by the time the time frame ended. This was not surprising, given that the 3rd year residents complete their year-long rotation at the clinic at the end of June and thus are not likely to be starting CBT (or other psychotherapy) with patients at that time. Thus, especially given that the average number of weekly CBT sessions in a row was no more than one month's time (≤ 4 in both samples), we are confident that our aim to capture the general patterns of treatment delivery for anxiety disorders was met despite the potential omission of some psychotherapy (CBT or other) sessions outside of the 6-month window for some patients.

In summary, these findings show that in a large urban community mental health clinic (even one that provides clinician training and supervision in exposure-based CBT) few patients with anxiety disorders who could benefit from exposure-based CBT received it. Further, the minority who did receive CBT rarely received the standard frequency or dose of therapy sessions or were offered exposure, arguably CBT's most powerful component. Rather, the vast majority of patients with anxiety disorders were offered medication and general supportive therapy. The results document the striking gap in the dissemination of exposure-based treatment for anxiety disorders. This gap points towards the importance of improving the reach of exposure-based CBT among adults with anxiety disorders treated in community mental health settings – a group of patients largely overlooked in previous dissemination and implementation efforts. Findings from this investigation point to the need to systematically examine administrator/system-, provider-, and patient-level barriers to offering, delivering, and receiving/completing a full course of exposure-based CBT, respectively, for patients with anxiety disorders seeking treatment in community mental health settings. Identifying barriers at each level of the system should inform targeted interventions to improve access to and retention in exposure-based CBT for patients with anxiety disorders.

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