Improving the Acceptability of Internet-Based Cognitive-Behavioral Therapy Among Black Americans

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This experiment tested whether reading a treatment rationale using evidenced-based persuasion techniques increases the acceptability of therapist-assisted Internet-based cognitive behavioral therapies (iCBT) among Black individuals and explored whether self-reported barriers to treatment moderated this relation. The study also examined whether endorsement of iCBT by a health professional or spiritual leader is positively associated with attitudes toward iCBT. Participants ($N = 268$; $n = 139$, University; $n = 129$, Community) were randomly assigned to read a treatment rationale for iCBT that used evidence-based persuasion techniques or a definition of iCBT that did not. Participants completed standardized self-report measures of treatment barriers and acceptability toward iCBT and rated their likelihood of using iCBT if endorsed by a health professional or spiritual leader. Participants reporting fewer barriers to treatment had more positive attitudes toward iCBT after reading a treatment rationale than those who read a definition. Participants reported a greater likelihood of using iCBT when endorsed by a health professional than by a spiritual leader or no authority figure. Participants recruited from the university reported more barriers to treatment than those recruited from the surrounding community. Future research is needed to replicate and better understand the use of persuasion techniques, authority figures, and differences in barriers to treatment between different communities in order to improve the acceptability of iCBT among Black Americans.

Keywords: Black American, iCBT, acceptability, treatment rationale, mental health barriers

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Despite recent gains in mental health consciousness and resources, many Black Americans who could benefit from mental health treatment do not seek it (U.S. Department of Health and Human Services, 2001). Barriers to treatment seeking have been well documented among Black communities, ranging from prohibitive costs and transportation (Alegría et al., 2002; Snell-Johns et al.,

2004), to mental health stigma and a lack of faith in treatment efficacy (Ayalon & Alvidrez, 2007; Gaston et al., 2016; Ward et al., 2013; Williams et al., 2012). Internet-based cognitive-behavioral therapies (iCBT) are mental health treatments delivered via the internet or other digital medium and are text based, often with the inclusion of video clips, audio files, and multimedia elements

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(Andersson et al., 2014). iCBT has the potential to circumvent barriers identified by Black Americans, as they are cost effective (Gerhards et al., 2010; Hedman et al., 2011), do not require transportation, and can be done in the privacy of one's home, potentially addressing concerns of treatment-seeking stigma.

iCBT is, unfortunately, vastly underutilized by the general public, which has prompted research into its poor uptake (Carper et al., 2013; Hennemann et al., 2017; Waller & Gilbody, 2009). Studies have noted that although there are advantages to using iCBT, there are disadvantages, too, such as concerns of confidentiality and lack of personal contact (Apolinário-Hagen et al., 2017; Choi et al., 2012; Schröder et al., 2015) and that people prefer face-to-face psychotherapy. However, research on iCBT among Black Americans is virtually nonexistent. The only study to explicitly examine attitudes toward iCBT among Black Americans (Jonassaint et al., 2017, 2020) found that, compared to Whites, Black participants were less likely to start and complete iCBT, although those who do complete report similar levels of improvement. A recent meta-analysis of randomized controlled trials investigating the efficacy and acceptability of iCBT (Andrews et al., 2018) supported the appeal and perceived benefits of iCBT, but the majority of studies (97%) did not report the racial/ethnic make-up of their sample. Among studies that do report racial/ethnic demographics, there are very few Black participants, with most studies recruiting fewer than 10 Black participants (Choi et al., 2015; Lattie et al., 2019; Patel et al., 2018; Rosso et al., 2017). Only one study included a proportionate number of Black participants compared to population estimates (Forand et al., 2018). Thus, the literature on attitudes toward iCBT reflects the systemic pattern of Black underrepresentation in the psychological research (Cundiff, 2012). It is unknown how Black individuals feel toward iCBT. Given its potential to overcome barriers specifically documented for Black Americans, this is a critical gap in the literature.

Efforts to improve attitudes toward iCBT have drawn on the Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003), which posits that performance expectancy (i.e., an individual's perception that technology will be beneficial) has the greatest impact on attitudes. Experimental studies show that providing a video explaining the rationale for iCBT significantly increased participants' feelings of credibility, expectancy-for-improvement, and likelihood of using iCBT among those reporting depressive symptoms, citing strong effect sizes ($d = .65$; Ebert et al., 2015; $r = -.56$; Mitchell & Gordon, 2007; $\eta_p^2 = 0.21$; Soucy et al., 2016). Casey et al. (2013) found that presenting even a brief, text-based educational component improved participants likelihood of using e-mental health services in the future. This work supports the Theory of Planned Behavior (Ajzen, 1991) which emphasizes the relationship among beliefs, attitudes, and behavioral intentions, with intentions being an immediate determinant of actual behavior and is consistent with research showing that mental health attitudes are predictive of treatment-seeking behaviors when examined both retrospectively (Beatie et al., 2016) and prospectively (Hammer & Spiker, 2018). Each of these studies presumed that informing participants of the advantages of iCBT in reducing treatment barriers (e.g., cost, convenience) would lead to improved attitudes toward the intervention, especially among those who endorsed more barriers to face-to-face treatment. None of these studies, however, reported Black Americans in their samples. It is therefore unknown whether this popular method for improving

acceptability of iCBT will be effective for Black Americans or if the impact will be different for Black people endorsing various barriers to traditional mental health treatment.

Research on treatment-seeking for in-person mental health treatment shows that Black Americans are less likely to seek specialty care due to cultural mistrust engendered by racism and mistreatment in the health care system (Cuevas et al., 2016; Whaley, 2001b, 2001a). Instead, Black Americans have historically sought information from a trusted institution that is associated with caregiving and coping among the Black community: The Church. The majority of Black Americans in the U.S. (87%) belong to a religious group (Pew Research Center, 2009), and seeking informal advice and treatment for mental illness from clergy is both common and encouraged for many Black Americans (Avent et al., 2015; Blank et al., 2002; Taylor et al., 2004). Additionally, research has indicated that Black clergy hold more positive attitudes than previously assumed toward making referrals to mental health resources (secular or otherwise) when member distress is apparent (Payne, 2014; Young et al., 2003). Therefore, it may be possible to leverage the trusted authority of spiritual leaders and clergy persons to increase the acceptability of iCBT.

Similarly, Black Americans often visit their primary care physicians as their immediate link to health care (Schappert & Burt, 2006). National surveys have indicated that less than half of Black respondents experiencing personal distress sought professional assistance for mental health problems (Neighbors, 1985; Neighbors et al., 2007). Black Americans who do obtain professional care are more likely to seek primary medical care than specialty mental health care (Neighbors, 1985; Neighbors et al., 2007; Snowden & Pingitore, 2002). Medical professionals are thus an avenue for referral to mental health services. Recent research has found the prescription of iCBT by general practitioners to be an effective method for promoting the use and completion of these programs (Hobbs et al., 2018; Newby et al., 2017; Williams & Andrews, 2013). Therefore, employing common help-seeking avenues used by Black Americans, such as medical and spiritual authority figures, may improve the attitudes, uptake, and utilization of iCBT.

Present Study

The purpose of this research is to identify strategies to increase acceptability of iCBT among Black Americans. This experimental study tests whether providing a rationale for iCBT that uses evidence-based persuasion techniques increases its acceptability among Black individuals. For the present study, *acceptability* was defined as a set of "cognitively based, positive attitudes toward these interventions" (Schröder et al., 2015, p. 137). This contrasts with previous studies defining acceptability as a construct of treatment satisfaction. The study also examines whether referral by a medical or spiritual authority figure is associated with increased likelihood of using iCBT. Based on prior literature, we hypothesized the following:

H (1): Participants who read a treatment rationale for iCBT will report greater acceptability compared to those who read a definition of iCBT.

H (2): Participants reporting more barriers to mental health treatment will report greater acceptability of iCBT.

H (3): Barriers to mental health treatment will moderate the effect of a treatment rationale on acceptability of iCBT such that there will be a stronger positive relation between receiving a rationale and acceptability of iCBT among participants reporting more barriers.

H (4): Participants will report being more likely to use iCBT if recommended by a spiritual leader or if prescribed by a health professional as compared to no recommendation.

Method

Participants

Participants were self-identified Black/African American adults ($N = 268$). To be eligible, participants had to be at least 18 years of age and fluent in English, evidenced by completion of the informed consent form (Flesch-Kincaid 7th grade reading level). Undergraduate participants ($n = 139$) were recruited from a large, urban, southeastern university and received course credit for their participation. Community participants ($n = 129$) were recruited in public places throughout the surrounding metropolitan area (e.g., parks) and had the opportunity to enter a raffle with a 1 in 30 chance of winning a \$25 Amazon gift card. The participants ranged in age from 18 to 85 ($M = 27.59$, $SD = 13.58$), were predominantly female (67%) and highly educated (70% have some college education). Table 1 shows participants' demographic characteristics.

Table 1

Demographic Characteristics for Participants Recruited From the University Participant Pool and From the Surrounding Community for Each Experimental Condition

Demographics	Participants' characteristics	Rationale condition $n = 115$ (%)		Definition condition $n = 153$ (%)		Total $N = 268$ (%)
		University participants $N = 64$ (%)	Community participants $N = 51$ (%)	University participants $N = 75$ (%)	Community participants $N = 78$ (%)	
Age	M_{Age} (SD)	20.0 (3.8)	37.5 (16.0)	20.6 (5.4)	33.9 (15.2)	27.59 (13.6)
Sex	Male	9 (14.1)	13 (25.5)	19 (25.3)	46 (59.0)	87 (32.5)
	Female	54 (85.9)	37 (72.5)	56 (74.7)	32 (41.0)	179 (66.8)
Sexual identity	Did not disclose	1 (1.6)	1 (2.0)	0 (0.0)	0 (0.0)	2 (0.4)
	Heterosexual	56 (87.5)	44 (86.3)	64 (85.3)	58 (74.4)	222 (82.8)
	Lesbian, gay, bisexual	8 (12.5)	5 (9.8)	11 (14.7)	14 (17.9)	38 (14.2)
	Self-identify	0 (0.0)	2 (3.9)	0 (0.0)	4 (5.1)	6 (2.2)
Current education status	Did not disclose	0 (0.0)	0 (0.0)	0 (0.0)	2 (2.6)	2 (0.7)
	High school	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.3)	1 (0.4)
	Some college/currently in college	63 (98.4)	15 (29.4)	72 (96.0)	26 (33.3)	176 (65.7)
	Graduate/professional degree	1 (1.6)	3 (5.9)	0 (0.0)	2 (2.6)	6 (2.2)
	Nondegree student/Other	0 (0.0)	0 (0.0)	3 (4.0)	1 (1.3)	4 (1.5)
Religiosity	Nonstudent ^a	0 (0.0)	33 (64.7)	0 (0.0)	48 (61.5)	81 (30.2)
	Very important	26 (40.6)	27 (52.9)	31 (41.3)	38 (48.7)	122 (45.5)
	Important	19 (29.7)	11 (21.6)	26 (34.7)	18 (23.1)	74 (27.6)
	Neutral	13 (20.3)	7 (13.7)	11 (14.7)	16 (20.5)	47 (17.5)
	Unimportant	3 (4.7)	3 (5.9)	5 (6.7)	6 (7.7)	17 (6.3)
	Very unimportant	3 (4.7)	0 (0.0)	2 (2.7)	0 (0.0)	5 (1.9)
Relationship status	Did not disclose	0 (0.0)	3 (5.9)	0 (0.0)	0 (0.0)	3 (1.1)
	Single	45 (70.3)	29 (56.9)	45 (60.0)	53 (67.9)	172 (64.2)
	Serious dating or committed relationship	16 (25.0)	7 (13.7)	23 (30.7)	11 (14.1)	57 (21.3)
	Civil union, domestic partnership or equivalent	0 (0.0)	2 (3.9)	0 (0.0)	0 (0.0)	2 (0.7)
	Married	3 (4.7)	4 (7.8)	3 (4.0)	7 (9.0)	17 (6.3)
	Separated/divorced/widowed	0 (0.0)	9 (17.6)	2 (2.7)	7 (9.0)	18 (6.7)
	Did not disclose	0 (0.0)	0 (0.0)	2 (2.7)	0 (0.0)	2 (0.7)

^a Reflects current noneducational status but does not indicate highest level of education completed (i.e., may include college graduates).

An a-priori power analysis was conducted based on the work of Ebert et al., (2015). Because this study used a video-based treatment rationale to increase acceptability, a more conservative effect size ($\eta^2 = 0.03$) was adopted for the present study's text-based treatment rationale. A sample size of $N = 260$ was determined to be sufficiently powered (.80) to test the hypotheses.

Measures

Participants completed a survey developed and hosted on the Qualtrics online survey platform. The survey included the following measures:

Treatment Acceptability

Attitudes Toward Psychological Online Interventions Scale (APOI; Schröder et al., 2015) is a 16-item validated measure of attitudes toward online psychological interventions that, for the purposes of the current project, was modified to reference therapist-assisted iCBT. The APOI comprises four subscales measuring attitudes toward psychological online interventions: "Skepticism and Perception of Risk," "Confidence in Effectiveness," "Technologization Threat," and "Anonymity Benefits." Participants rate their agreement with each item (e.g., "I have the feeling that iCBT can help me.") on a five-point Likert scale (1 = *Totally agree* to 5 = *Totally disagree*). Although not indicated in original paper (Schröder et al., 2015), positively valenced items should be reverse

coded (J. Schröder, personal communication, February 12, 2020). Total scores range from 16 to 80 with higher scores indicating more positive attitudes toward iCBT. The APOI demonstrated high overall internal consistency ($\alpha = .77$) in a sample of 1,013 German-speaking participants (Schröder et al., 2015). The APOI was used as the primary measure for acceptability of iCBT and demonstrated excellent internal consistency in the present sample ($\alpha = .89$).

Barriers to Treatment

Perceived Barriers to Psychological Treatment Scale (Mohr, Ho, et al., 2010). The Perceived Barriers to Psychological Treatment Scale (PBPT) is a self-report measure of the extent to which participants perceive barriers to seeking mental health treatment. It comprises 25 items divided into eight subscales (25 items, $\alpha = .71-.89$). Past research shows that, compared to White participants, African Americans report greater scores on the following subscales: Stigma (discomfort with seeking psychological treatment due to fears of judgment from others and oneself), Participation Restrictions (physical and logistical barriers to treatment), and Availability of Services (general accessibility and awareness of resources; Mohr, Ho, et al., 2010), indicating that these are particularly salient barriers that need to be addressed.

Responses are scored on a five-point Likert scale (1 = *Not difficult at all* to 5 = *Impossible*) ranging from 25 to 125. If any item is rated as “extremely difficult” or “impossible,” then the respective subscale can be labeled as a “substantial barrier,” regardless of the scores on other items of the subscale (Mohr et al., 2006). The PBPT was validated on a large sample of primary care patients ($N = 658$) representing a diverse ethnic demographic, and the measure and its subscales demonstrate good to excellent reliability ($\alpha = .71-.89$; Mohr, Ho, et al., 2010). The PBPT demonstrated excellent internal consistency in the present sample ($\alpha = .92$).

Participant Characteristics

Demographics Questionnaire. A 22-item demographics questionnaire was developed for the present study using items from the Standardized Data Set from the Center for Collegiate Mental Health at Penn State University (Center for Collegiate Mental Health, 2017). These questions were developed with input from over 100 college counseling centers in the U.S. describing approximately 150,000 university students seeking mental health treatment and assessed age, sex, sexual orientation, education, finances, relationship status, and religious/spiritual preference.

Depression, Anxiety, and Stress Scale-21 Item (Lovibond & Lovibond, 1993). The Depression, Anxiety, and Stress Scale-21 (DASS-21) is a validated measure of psychological symptoms comprised of three subscales: Depression, anxiety, and stress. Participants rate each item on a four-point Likert scale, and scores range from 0 to 126, with higher scores indicating greater distress. The DASS-21 was normed on a nonclinical sample, and it shows good psychometric properties across racial groups, including among African Americans (Norton, 2007). The DASS-21 demonstrated excellent internal consistency in the present sample ($\alpha = .92$). The DASS-21 is positively correlated with rates of treatment seeking (Magaard et al., 2017).

Mental Health Treatment Experience. Participants' experience using both face-to-face and internet-based mental health

services was measured using a series of Likert-type self-report items developed for this study (e.g., “Have you ever received face-to-face psychotherapy or counseling?”, “If so, how helpful were these services”). Questions solicited information regarding both past and current experiences with mental health treatment.

Procedure

Participants were recruited by undergraduate and graduate research assistants canvassing public locations (i.e., parks) throughout the metropolitan area and from the university participant pool. Undergraduate participants enrolled for course credit were provided access to the survey link to complete the study at their leisure on their own personal web-enabled devices. All data were collected online and will be made available upon reasonable request. This study was conducted in compliance with the university Institutional Review Board Protocol #H18341 and preregistered with the Open Science Framework (<https://osf.io/2gyqx>; Ellis & Anderson, 2020).

Following informed consent, all participants were randomly assigned via Qualtrics (1:1 allocation) to read either a treatment rationale or a definition of iCBT, eliminating the possibility of experimenter bias. Participants completed questionnaires assessing demographic information, symptoms of depression, anxiety, and stress, and barriers to psychological treatment. Participants then read about iCBT, the content of which varied according to experimental condition (described below), completed the questionnaire on attitudes toward iCBT (APOI) and indicated their likelihood of using iCBT if recommended/prescribed by an authority figure or not.

Experimental Condition: Treatment Rationale

Participants who were randomly assigned to read a text-based treatment rationale received a description of iCBT, a brief summary of research evidence supporting the efficacy of such treatments, and a Frequently Asked Questions (FAQ) section designed to ease common concerns about iCBT based on the literature (Travers & Benton, 2014; see Supplemental Materials S1 for details). The treatment rationale uses evidence-based persuasion techniques as outlined by Cialdini (2006), including leveraging the appeal of authority figures (rationale is presented by a White, middle-aged, female licensed clinical psychologist) and social proof (assuring the reader that iCBT programs are used and effective). An explanation of technical language (e.g., iCBT) was also incorporated, as it has been shown to increase confidence in psychotherapy (Constantino et al., 2012). After being provided the treatment rationale, each participant answered three questions about iCBT, which served as a manipulation check ensuring that participants read and understood the treatment rationale. This treatment rationale was designed as part of a larger study (Molloy et al., 2021) incorporating elements of persuasion that could be delivered in a text/image format to a diverse audience.

Participants not assigned to receive a rationale were provided a brief definition of internet-delivered, cognitive-behavioral therapies (See Supplemental Materials S2 for details).

Analytic Plan

H (1) An Analysis of Covariance (ANCOVA) was proposed to test the hypothesis that participants who receive a treatment rationale would report greater acceptability of iCBT compared to those

who do not receive a rationale (<https://osf.io/2gyqx>). This analysis was modified to a 2×2 ANCOVA (Rationale $\times$ Recruitment Source with DASS-21 as covariate) to account for the potential influence of participant recruitment source. Some proposed covariates were not used due to experimenter error in data collection.

H (2) Pearson's r correlations were proposed to test the hypothesis that participants' self-reported barriers to mental health treatment (PBPT) would be positively related to acceptability of iCBT (APOI).

H (3) Multiple regression analyses were proposed to examine the moderating effect of barriers to treatment (PBPT) on the relationship between the treatment rationale (yes, no) and self-reported acceptability (APOI) toward iCBT. First Block: Covariates—mental health symptomatology (DASS-21). Second Block: Treatment rationale (yes/no) and perceived barriers to treatment (i.e., stigma, participant restrictions, and availability of services). Third Block: Interaction effects—treatment rationale $\times$ barriers to treatment.

H (4): Paired samples t -tests were originally proposed to examine whether there was a significant difference between participants' self-reported willingness to use iCBT and the type of authority figure making the endorsement for iCBT (i.e., health professional vs. spiritual leader). This analysis was modified to a Repeated Measures Analysis of Variance (ANOVA) to account for a third level of the independent variable (i.e., ratings made based on no authority endorsement at all).

Results

Participants who did not answer all three questions assessing comprehension of the treatment rationale correctly (which served as a manipulation check; $n = 41$) or who completed the survey under 5 min ($n = 1$) were excluded from data analyses to maximize internal validity, resulting in a sample of $N = 268$ (University = 139; Community = 129). University participants were 2.77, 95% CI [1.30, 5.92] times more likely to pass the manipulation check than community participants.

Descriptive Statistics

Table 1 shows a variety of participant characteristics within the sample. Most participants self-identified as female (67%), heterosexual (83%), single (64%), and reported that religion was important to them (73%). Participants recruited from the university participant pool were, by definition, currently in college. Almost a third of participants recruited from the community was currently in college or had a professional degree, but, because of an error in data collection, it is not known what proportion had graduated from college.

There were no differences between the experimental conditions on any of the key variables, including attitudes toward iCBT, depressive and anxious symptom severity, nor barriers to treatment (all p 's $> .05$). As shown in Table 2, relative to participants recruited from the community, participants recruited from the university reported they had more barriers to treatment (M diff = 6.63, t -score = 3.45, $p = .001$). Over one third (36%) of participants recruited from the community reported receiving therapy, compared to 25% of participants recruited from the university, although this difference was not significant ($p = .05$).

Table 3 shows the means, standard deviations, and intercorrelations for key variables. Less than half the sample (44.6%) indicated they would "likely" or "definitely" use an iCBT with 1.3% of participants having used an online mental health program in the

past. Responses to the *Depression, Anxiety, and Stress Scale-21* indicated that participants did not endorse clinical levels of mental health symptoms ($M = 29.90$, $SD = 21.06$) based on the suggested cutoff of 60 for severe mental illness (Lovibond & Lovibond, 1995).

As suggested by the authors (Mohr et al., 2006), each item on the Perceived Barriers to Psychological Treatment Scale was classified as a "substantial barrier" (i.e., "extremely difficult" or "impossible") or not. The majority of participants (59.9%) reported at least one substantial barrier, 43.5% endorsed at least two substantial barriers, and 31.6% of participants endorsed three or more substantial barriers to psychological treatment. As shown in Table 4, "cost of psychotherapy" was the most frequently reported substantial barrier to treatment (39.2% of participants). Average scores on the subscales of the PBPT are as follows: Total score ($M = 42.71$, $SD = 15.08$), Stigma ($M = 11.87$, $SD = 5.48$), Participation Restrictions ($M = 5.59$, $SD = 2.35$), and Availability of Services ($M = 3.99$, $SD = 2.13$).

Does Using a Treatment Rationale Lead to Greater Acceptance of iCBT?

A 2×2 ANCOVA (Rationale $\times$ Recruitment Source with DASS-21 as covariate) was conducted examining the effect of treatment rationale for participants recruited from the university and surrounding community on attitudes of acceptability toward iCBT while controlling for depression and anxiety symptom severity. There was not a significant two-way interaction between receiving the treatment rationale and recruitment source, $F(1, 220) = 0.09$, $p = .76$, partial $\eta^2 < 0.001$, nor a main effect of recruitment source, $F(1, 220) = 0.002$, $p = .96$, partial $\eta^2 < 0.01$, on attitudes of acceptability toward iCBT. Contrary to the hypothesis, there was not a main effect of treatment rationale, $F(1, 220) = 2.35$, $p = .13$, partial $\eta^2 = 0.01$ on attitudes of acceptability toward iCBT.

Do Participants Who Report More Barriers to Treatment Show Greater Acceptance of iCBT?

Pearson's r correlations tested the hypothesis that the number of self-reported barriers to mental health treatment would be related to more positive attitudes toward iCBT. Contrary to hypotheses, there was no relation between acceptability of iCBT and the total number of barriers, $r(219) = -.09$, $p = .18$, nor the stigma, $r(231) = -.08$, $p = .21$, participant restrictions $r(231) = -.08$, $p = .24$, or availability of services subscales, $r(231) = -.01$, $p = .91$.

Do Treatment Barriers Moderate the Relation Between Receiving a Treatment Rationale and Acceptance of iCBT?

A series of multiple hierarchical regressions using bias-corrected 95% confidence intervals calculated from 5,000 bootstrapped samples with the SPSS PROCESS macro (Hayes, 2018) was used to test the hypothesis that barriers to treatment moderates the relation between receiving a treatment rationale and attitudes toward iCBT. This analysis was conducted separately for the barriers to treatment total score, as well as the stigma, participant restrictions, and availability of services subscale scores. For each regression, recruitment source (university, community) and depression and anxiety symptom severity (DASS-21) were entered in the first

Table 2

Measures of Acceptability of iCBT, Symptoms of Depression and Anxiety, and Barriers to Treatment Across Participants Recruited From the University and the Community and by Experimental Group

Scale	University participants	Community participants	Group differences			Rationale condition	Definition condition	Group differences		
	<i>M</i> (<i>SD</i>)/Ratio	<i>M</i> (<i>SD</i>)/Ratio	<i>t</i> -score/ χ^2 score	<i>df</i>	<i>p</i>	<i>M</i> (<i>SD</i>)/Ratio	<i>M</i> (<i>SD</i>)/Ratio	<i>t</i> -score/ χ^2 score	<i>df</i>	<i>p</i>
APOI	50.54 (6.50)	50.85 (5.98)	0.37	232	.709	51.32 (6.70)	50.22 (5.93)	1.33	232	.186
DASS	31.80 (20.37)	27.80 (21.70)	1.51	252	.132	31.87 (21.27)	28.45 (20.86)	1.28	252	.202
PBPT	45.79 (15.43)	39.16 (13.90)	3.45	235	.001	43.55 (14.84)	42.14 (15.27)	0.71	235	.48

Note. University participants ($N = 127$ – 139) and community participants ($N = 110$ – 125) depending on the pattern of data missingness. APOI = attitudes toward psychological online interventions scale (therapist assisted); DASS = depression, anxiety, and stress scale; PBPT = perceived barriers to psychological treatment scale; iCBT = Internet-based cognitive behavioral therapies.

step, treatment rationale (yes, no) and barriers to treatment were entered in the second step, and the interaction between treatment rationale and barriers to treatment was entered in the third step.

As hypothesized, there was a significant interaction between treatment rationale and barriers to treatment for the total scale score, $\Delta R^2 = .06$, $F(1, 205) = 12.70$, $p < .001$, $b = -.21$, 95% CI $[-.32, -.09]$, $t(204) = -3.56$, $p < .001$ and for the stigma subscale score, $\Delta R^2 = .06$, $F(1, 226) = 14.67$, $p < .001$, $b = -.57$, 95% CI $[-.87, -.28]$, $t(217) = -3.83$, $p < .001$. There was not, however, a significant interaction between receiving a treatment rationale and the participant restrictions subscale score, $\Delta R^2 = .01$, $F(1, 216) = 2.40$, $p = .12$, nor the availability of services subscale score, $\Delta R^2 = .01$, $F(1, 216) = 2.79$, $p = .10$.

Simple slope analyses (unstandardized β coefficients) tested the nature of the significant interactions and showed that compared to the no rationale condition, participants who received a rationale reported more favorable attitudes toward iCBT, but, unexpectedly, this was only among those participants who reported fewer total barriers, (1 *SD* below mean), $b = 4.51$, 95% CI $[2.06, 6.97]$, $t(205) = 3.62$, $p < .001$. There was no difference in attitudes toward iCBT after receiving a treatment rationale among participants reporting average (at the mean), $b = 1.40$, 95% CI $[-.29, 3.10]$, $t(205) = 1.63$, $p = .10$ or higher levels of total barriers (1 *SD* above mean),

$b = -1.71$, 95% CI $[-4.08, .67]$, $t(205) = -1.42$, $p = .16$ (see Figure 1). An identical pattern was found for stigma subscale scores: Compared to the no rationale condition, participants who received a treatment rationale reported more positive attitudes toward iCBT if they endorsed relatively low levels of stigma, $b = 4.38$, 95% CI $[2.12, 6.64]$, $t(217) = 3.82$, $p < .001$, but not at average or higher levels of stigma; $b = 1.49$, 95% CI $[-.16, 3.14]$, $t(217) = 1.78$, $p = .08$ and $b = -1.73$, 95% CI $[-4.03, .57]$, $t(217) = -1.48$, $p = .14$, respectively (see Figure 2).

The effects of recruitment source and depression and anxiety symptom severity were nonsignificant in all models.

Does Endorsement From an Authority Figure Increase the Likelihood of Using iCBT?

Repeated measures ANOVA tested the hypothesis that participants would report being more likely to use iCBT if recommended by a spiritual authority figure or if prescribed by a health professional relative to no endorsement by an authority figure. Mauchly's test, $\chi^2(2) = 10.26$, $p = .006$, indicated a violation of sphericity, therefore a Greenhouse–Geisser correction was applied ($\epsilon = 0.96$). Results indicated a significant main effect, $F(1.92, 468.62) = 23.09$, $p < .001$, $\eta_p^2 = .09$. Bonferroni-corrected pairwise comparisons showed that participants were more likely to use iCBT if prescribed by a health professional ($M = 3.62$, $SD = 1.13$) than if referred by a spiritual leader ($M = 3.26$, $SD = 1.16$; M difference = .36, $p < .001$), or in the absence of an endorsement by an authority figure ($M = 3.29$, $SD = 1.12$; M difference = .32, $p < .001$). Participants reported being no more likely to use iCBT if referred by a spiritual leader than in the absence of an endorsement by an authority figure (M difference = .04, $p > .05$).

Discussion

Overall, the results of this study did not support hypotheses: Providing a treatment rationale did not improve acceptability toward iCBT and there was not a direct positive relation between barriers to treatment and acceptability of iCBT. Barriers to treatment did moderate the relation between a treatment rationale and acceptability toward iCBT, although in an unanticipated direction, in that the rationale only improved attitudes toward iCBT among people reporting fewer barriers to treatment. Finally, the recommendation of spiritual leader was not associated with a greater likelihood of using iCBT, but the prescription of a health professional was.

Table 3

Means, Standard Deviations, and Correlations Between Attitudes Toward Internet-Based Cognitive-Behavior Therapy, Symptoms of Depression and Anxiety, Barriers to Treatment, and History of Face-to-Face Treatment

Variable	1	2	3	4
1. Attitudes toward iCBT (APOI)	(.89)			
2. DASS	-.09	(.92)		
3. PBPT	-.09	.61**	(.92)	
4. Tx Hx	-.03	.15*	.10	—
<i>M</i>	50.67	29.90	7.52	42.71
<i>SD</i>	6.27	21.06	8.58	15.08
Range	33–80	0–104	25–94	—

Note. $N = 219$ – 237 depending on the pattern of data missingness. Entries on the main diagonal are Cronbach's α . APOI = Attitudes toward psychological online interventions; DASS = depression and anxiety symptom severity; PBPT = perceived barriers to psychological treatment; Tx Hx = history of face-to-face treatment (yes, no); iCBT = Internet-based cognitive behavioral therapies.

* $p < .05$. ** $p < .001$.

Table 4

Percentage of Participants Reporting That an Item on the Perceived Barriers to Psychological Treatment Scale was a “Substantial” Barrier (as Recommended by the Authors of the Scale; Mohr et al., 2006)

Barrier	University <i>n</i> (% Endorsed)	Community <i>n</i> (% Endorsed)	Total <i>n</i> (% Endorsed)
1. Cost of psychotherapy	63 (45.3)	42 (32.6)	105 (39.2)
2. Interference from daily responsibilities	34 (24.5)	15 (11.6)	49 (18.3)
3. Don't know how to find counselor/therapist	28 (20.1)	15 (11.6)	43 (16.0)
4. Difficulties getting time off work	27 (19.4)	11 (8.5)	38 (14.2)
5. Being seen while emotional	26 (18.7)	8 (6.2)	34 (12.7)
6. Discomfort talking to someone I don't know	21 (15.1)	11 (8.5)	32 (11.9)
7. My problems are not bad enough	19 (13.7)	12 (9.3)	31 (11.6)
8. Problems with transportation	17 (12.2)	12 (9.3)	29 (10.8)
9. Lack of available counseling/psychotherapy	18 (12.9)	11 (8.5)	29 (10.8)
10. Concerns about documentation in insurance	19 (13.7)	8 (6.2)	27 (10.1)
11. Concerns about being judged	17 (12.2)	7 (5.4)	24 (9.0)
12. Lack of energy or motivation	13 (9.4)	8 (6.2)	21 (7.8)
13. Difficulty motivating self	14 (10.1)	5 (3.9)	19 (7.1)
14. Counseling means I can't solve problems myself	15 (10.8)	4 (3.1)	19 (7.1)
15. Stigma of family/friends knowing	14 (10.1)	4 (3.1)	18 (6.7)
16. Would not expect counseling to be helpful	11 (7.9)	6 (4.7)	17 (6.3)
17. Attending counseling would feel self-indulgent	10 (7.2)	6 (4.7)	16 (6.0)
18. Concerns about upsetting feelings in counseling	9 (6.5)	7 (5.4)	16 (6.0)
19. Counselor would not care about me	7 (5.0)	8 (6.2)	15 (5.6)
20. Distrust counselors	5 (3.6)	8 (6.2)	13 (4.9)
21. Talking about problems makes them worse	9 (6.5)	3 (2.3)	12 (4.5)
22. Difficulty walking or getting around	6 (4.3)	3 (2.3)	9 (3.4)
23. Bad experiences with counselors	4 (2.9)	5 (3.9)	9 (3.4)
24. Physical symptoms (fatigue, pain, breathing problems)	3 (2.2)	5 (3.9)	8 (3.0)
25. Illness making it hard to leave home	5 (3.6)	1 (0.8)	6 (2.2)

Number of barriers	University <i>n</i> (% Endorsed)	Community <i>n</i> (% Endorsed)	Total <i>n</i> (% Endorsed)
0	45 (35.4)	50 (45.5)	95 (40.1)
1	16 (12.6)	23 (20.9)	39 (16.5)
2	16 (12.6)	12 (10.9)	28 (11.8)
3+	50 (39.4)	25 (22.7)	75 (31.6)

Note. *N* = 268. Barriers rated as “extremely difficult” or “impossible are classified as “substantial barriers” (Mohr et al., 2006). Percentages do not total 100% as participants may rate more than one barrier as being “substantial”.

These null results contradict previous studies, which demonstrated the positive impact of presenting a treatment rationale or psychoeducation on participants' feelings of credibility, expectancy-for-improvement, and likelihood of using iCBT (Ebert et al., 2015; Mitchell & Gordon, 2007; Soucy et al., 2016). One reason for this null result may be the construction of the treatment rationale itself. The length of the presented rationale was approximately 800 words. Some research has indicated that although rationale content is important, length does matter, with shorter descriptions (approximately 250 words) more effective for enhancing expectations of therapeutic success (Horvath, 1990).

In line with previous research, participants in this study endorsed several barriers to mental health treatment with cost being a substantial impediment for 40% of the sample. Furthermore, 43% of participants reported more than one substantial barrier to treatment reflecting both structural and attitudinal obstacles to face-to-face therapy. Therefore, the lack of relation between barriers to treatment and attitudes toward therapist-assisted iCBT was surprising given the oft-touted benefits of using iCBT to circumvent barriers such as cost, stigma, and treatment availability. Indeed,

participants frequently endorse advantages of iCBT in reducing stigma, lack of motivation, availability, and cost of treatment (Choi et al., 2015; Travers & Benton, 2014), despite expressing an overall preference for face-to-face therapy over internet-based therapy. This may reflect nomothetic appraisals for the benefits of iCBT in general, but an individual preference to engage in traditional therapy when addressing personal mental health concerns. Another possible explanation is that barriers to traditional mental health treatment may also apply to iCBT. This may be especially true for attitudinal barriers. For example, stigma-related concerns of “being judged” or “counseling means I can't solve problems myself” may equally hinder participants regardless of whether they are seeking a therapist in-person or via the internet. Indeed, previous research has indicated that although Black Americans are more likely to face structural and logistical barriers (e.g., cost and transportation) in the pursuit of therapy (Alegria et al., 2012; Snell-Johns et al., 2004), attitudinal and evaluative barriers toward psychotherapy often prove to be the biggest obstacle (Mojtabai et al., 2011; Saren et al., 2007). One's impression of the cost and convenience benefits of iCBT may be muted by attitudinal barriers, such as stigma.

Figure 1

Line Graph Indicating That Overall Barriers to Psychological Treatment Moderates the Relationship Between Treatment Rationale and Acceptability Toward Therapist-Assisted iCBT

Note. iCBT = Internet-based cognitive behavioral therapies.

Participants recruited from the university subject pool reported more barriers to treatment than participants in the community, which is interesting given that all university students have access to no-cost mental health treatment via the University Counseling Center and low-cost mental health treatment via the University Psychology Clinic. This finding is comparable to prior literature indicating that young adults endorse greater barriers to treatment than older adults (Andrade et al., 2014; Pepin et al., 2009), but inconsistent with studies finding no differences between student and community samples (Forbes et al., 2017; Segal et al., 2005). If this finding is replicated it will be important to understand why participants recruited from the university report more barriers to treatment

Figure 2

Line Graph Indicating That Stigma Significantly Moderates the Relationship Between Treatment Rationale and Acceptability Toward Therapist-Assisted iCBT

Note. iCBT = Internet-based cognitive behavioral therapies.

than participants recruited from the community—differences between university participants and community participants could reflect differences in age, accumulated wealth, or perceived resources, though further study is needed. Regardless, this finding highlights the importance of outreach to Black students about the availability of mental health treatment.

The proportion of participants in this study who indicated they would “likely” or “definitely” use iCBT (45%) is comparable to prior literature reporting that participants would either “possibly” or “definitely” be interested in using iCBT (35%–55%; Choi et al., 2015; Mohr, Siddique, et al., 2010; Wootton et al., 2011) and better than other studies in which perceptions of iCBT were “poor” or “neutral” or intentions to use iCBT were low (Carper et al., 2013; Musiat et al., 2014; Travers & Benton, 2014). Similar to previous estimates (Klein & Cook, 2010; Mitchell & Gordon, 2007; Neal et al., 2011; Soucy et al., 2016), a negligible proportion of our sample (1.3%) had any experience using iCBT. Low familiarity with iCBT may breed more perception of risk and aversion, especially given the more popular option of face-to-face therapy (Mohr, Siddique, et al., 2010; Musiat et al., 2014).

Participants expressing a greater likelihood of using an iCBT program if prescribed by a health professional than if recommended by a spiritual leader or no one at all was interesting given that 73.1% of the current sample rated their religious or spiritual preference as “Important” or “Very important” to them. Studies have shown that church-based mental health promotion initiatives have significant influence on health behaviors among African Americans (Campbell et al., 2007; Peterson et al., 2002). Given that clergy in the Black religious community are often gatekeepers to broader mental health access via pastoral care and external referrals (Avent et al., 2015; Blank et al., 2002; Taylor et al., 2000), this surprising finding deserves further investigation. However, results of the study suggest that leveraging the prescriptive authority of medical professionals may be an effective method for improving treatment dissemination and access to iCBT among Black Americans.

Strengths and Limitations

This is the first experimental study to explore barriers to treatment and attitudes of acceptability for nontreatment seeking Black participants. This is important because much of the existing literature that has examined acceptability toward iCBT have used treatment-seeking samples (which may not be as generalizable to the broader population) and very few have recruited Black participants; a community that disproportionately faces barriers to treatment and may stand to benefit from the advantages afforded by iCBT (e.g., cost savings, accessibility, and reduced stigma). Furthermore, this study is the first to examine actionable strategies for improving attitudes toward iCBT among Black Americans.

Despite the study’s strengths, there are limitations that warrant attention. Over 70% of participants had some level of college education, which is not surprising, given that about half of participants were recruited from the university subject pool and almost a third of participants recruited from the community were in college or had a professional degree. Unfortunately, the proportion of participants who were recruited from the community who graduated from college was not measured. This may have implications for measuring attitudes toward internet-based mental health treatments as educational attainment has been linked to mental health treatment

seeking (Steele et al., 2007; see Broman, 2012, for evidence of the inverse relationship of education on Black American treatment seeking). Furthermore, the treatment rationale was designed for a parent study (Molloy et al., 2021) that included a demographically diverse and varied population and the primary speaker was that of a White clinical psychologist. The lack of cultural-tailoring and cross-racial presentation of the speaker may have impacted acceptability for a Black participant sample. Cultural mistrust is associated with negative views and expectations of White mental health providers (Cuevas et al., 2016; Whaley, 2001a, 2001b) and research has generally supported stronger preferences for mental health treatment from racially concordant providers among Black Americans (Cabral & Smith, 2011; Ellis et al., 2019; Malat et al., 2010). Additionally, the distinction between a treatment rationale and a brief definition, although conceptually important for providing the minimum information needed to provide an informed opinion toward a still nascent technology (i.e., iCBT), may have been perceived as functionally identical between participants in each condition. Essentially this may have reflected a comparison between an experimental condition and active control. Lastly, although attitudes toward treatments are predictive of treatment-seeking behavior (Beatie et al., 2016; Hammer & Spiker, 2018) they do not equate to treatment-seeking behavior, and it is imperative that future research investigate actual uptake of iCBT.

Future Directions

The need to increase the diversity and inclusion of minority and underrepresented populations in the literature concerning attitudes and utilization of internet-delivered therapies is paramount. Mental health disparities persist in Black and African American communities (Gaston et al., 2016), and these communities stand to disproportionately benefit from the opportunities afforded through this novel medium. Indeed, 40% of participants in the present study reported cost being a prevailing barrier to mental health treatment with nearly half of participants endorsing more than one substantial barrier. If barriers to treatment are multifaceted, this requires a multifaceted solution. We cannot simply reduce structural barriers of cost and accessibility without also addressing attitudinal barriers such as stigma. iCBT is well-suited to address these therapeutic needs.

Furthermore, although research has widely supported the efficacy and effectiveness of iCBT interventions in reducing mental health symptoms for majority populations (Andrews et al., 2018; Hedman et al., 2012) it has largely neglected examining the efficacy and acceptability of these treatments for Black populations, save for select few studies (Jonassaint et al., 2017, 2020). Even less attention has been given to understanding the extent to which communities of color perceive the benefit of internet-delivered therapies in mitigating barriers to therapy such as stigma, lack of faith in treatment, affordability, and convenience. This is an important gap in the literature that deserves further investigation.

It would behoove researchers to further invest in the development of acceptance-facilitating interventions for iCBT. Key moderators, such as attitudinal barriers to treatment, mental health distress, and treatment history, are also poised for further investigation. Additionally, a behavioral measure of intent and use of iCBT would be informative for elucidating the link between

attitudes of acceptability and treatment-seeking behavior as the two are not inherently equal (Diala et al., 2000).

Lastly, it could be argued that a deliberate attention to tailoring treatment rationales to a given audience may prove fruitful. Research has demonstrated the efficacy of culturally tailored mental health interventions for minority populations (Barrera et al., 2013; McCall et al., 2019; Rathod et al., 2018) but thus far none have been created for Black Americans regarding the use of iCBT. Investigating the potential impact of speaker identity, background, racial matching, and endorsement on iCBT treatment-seeking attitudes deserves further study for identifying the optimal delivery of treatment rationales to Black Americans, which is a highly heterogeneous group. Ultimately, for internet treatments to be effectively integrated into routine practice, they will need to achieve “equivalence in terms of clinical outcomes, efficiency in terms of resource use and costs, and *acceptability* of “minimal interventions” to patients and therapists” (Bower & Gilbody, 2005, p. 11). The previous three decades have demonstrated our capacity to design, evaluate, and deploy efficacious internet-based therapies. It is now time that we devote our efforts to understanding and improving the public’s desire to actually use them, especially among underserved and minority communities.

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