NBER WORKING PAPER SERIES

# GENDER IDENTITY, RACE, AND ETHNICITY-BASED DISCRIMINATION IN ACCESS TO MENTAL HEALTH CARE: EVIDENCE FROM AN AUDIT CORRESPONDENCE FIELD EXPERIMENT

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Working Paper 28164
http://www.nber.org/papers/w28164

NATIONAL BUREAU OF ECONOMIC RESEARCH
1050 Massachusetts Avenue
Cambridge, MA 02138
December 2020, Revised August 2023

The views expressed in this paper do not necessarily represent the views of the Office of Evaluation Sciences, the General Services Administration, or the United States government. We are thankful for grant support from the National Science Foundation through an NSF CAREER grant to Patrick Button (#2046642), and funding from Tulane University's Murphy Institute, the School of Liberal Arts, the Newcomb Institute, and the COR Research Fellowship. Luca Fumarco acknowledges the generous support from the NPO "Systemic Risk Institute" number LX22NPO5101, funded by European Union-Next Generation EU (Ministry of Education, Youth and Sports, NPO: EXCELES) and from the CERGE-EI Foundation Teaching Fellowship Program. The views expressed are our own and not those of any funders. We thank Sean Alvarez, Barb Lundebjerg, Emma Brick-Hezeau, Kyla Denwood, Batu El, Victoria Guest, Christopher Hoffler, Yu Liu, Lucía Paternostro, Nile Pierre, Matthew Shernicoff, Gregory Shoats, Kodhai Thirumalai, and Brandon Ware for excellent research assistance and comments. We also thank Stephanie Budge, Erik Plug, David Slusky, John Cawley, Joanna Lahey, Brigham Walker, and Janna Wisniewski for helpful feedback. We received helpful feedback from seminar and conference participants at ASSA 2021 and 2023 CSQIEP Virtual Seminar on Economics of LGBTQ+ Individuals, CERGE-EI, Charles University, FBK IRVAPP, Ohio University, Online Seminar on Discrimination and Disparities, RAND, SEA 2020 and 2022, University College Dublin, and the Vanderbilt LGBTQ+ Policy Lab Works in Progress Seminar. This study was approved by the Tulane University IRB (2019-1122-TU Uptown). This experiment was pre-registered at the American Economic Association's registry for randomized controlled trials (RCT ID: AEARCTR-0006560). The views expressed herein are those of the authors and do not necessarily reflect the views of the National Bureau of Economic Research.

Gender Identity, Race, and Ethnicity-based Discrimination in Access to Mental Health Care: Evidence from an Audit Correspondence Field Experiment

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NBER Working Paper No. 28164
December 2020, Revised August 2023
JEL No. C93,I11,I14,I18,J15,J16

## ABSTRACT

Racial, ethnic, and gender minorities face mental health disparities. While mental health care can help, minoritized groups could face discriminatory barriers in accessing it. Discrimination may be particularly pronounced in mental health care because providers have more discretion over accepting patients. Research documents discrimination broadly, including in access to health care, but there is limited empirical research on discrimination in access to mental health care. We provide the first experimental evidence, from a correspondence audit field experiment ("simulated patients" study), of the extent to which transgender and non-binary people, African Americans, and Hispanics face discrimination in access to mental health care appointments. We find significant discrimination against transgender or non-binary African Americans and Hispanics. We do not find evidence of discrimination against White transgender and non-binary prospective patients. We are mostly inconclusive as to if cisgender African Americans or Hispanics face discrimination, except we find evidence of discrimination against cisgender African American women.

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An online appendix is available at http://www.nber.org/data-appendix/w28164

## I. Introduction:

Transgender and non-binary[2] (TNB) individuals confront considerable stigma and discrimination in their everyday lives. Compared to cisgender individuals, TNB individuals are more likely to live in poverty, be unemployed, and be food insecure (Grant et al. 2011; Carpenter, Eppink, and Gonzales 2020; Badgett, Carpenter, and Sansone 2021; Liszewski et al. 2018). TNB individuals are especially more likely to experience mental illness and severe psychological stress—they have higher rates of anxiety, depression, substance misuse, and suicidality (Safer et al. 2016; Lagos 2018; Meyer et al. 2017; Streed, McCarthy, and Haas 2018; Mustanski, Garofalo, and Emerson 2010; Su et al. 2016). These disparities are stark. In a sample of 1,053 transgender persons, for example, 41 percent report having attempted suicide—a rate that is 26 times higher than the general population (Safer et al. 2016). Racial and ethnic minorities face similar discrimination and disparities (Miranda et al. 2008; Williams 2018), especially TNB people of color.

Despite an increased need for general and mental health services, real or perceived discrimination by mental health care providers may affect a prospective patient's ability to access (or desire to seek) appropriate mental health care services and treatment. Previous research found that approximately one-fourth of transgender individuals opted not to seek health care when needed for fear of being mistreated due to their gender identity, and one-third report having had a negative experience related to identifying as transgender (James et al. 2016).

[2] Throughout the paper, we will discuss transgender and non-binary individuals together; however, these are separate gender identities, and our experimental design allows us to test for differences between binary transgender and non-binary individuals. Liszewski et al. (2018) propose useful gender identity definitions that we adopt. Someone who is transgender identifies with a gender identity that does not exclusively match their gender assigned at birth. Someone who is transgender may identify as a gender that is different than the one assigned at birth, with both genders, or no gender. Non-binary individuals identify neither as exclusively male nor exclusively female, may identify as something other than male or female, may identify as multi-gendered, or may not identify with any gender. Cisgender individuals have a gender identity that matches the sex they were assigned at birth.

If mental health care providers (MHPs) behave in a manner, consciously or not, that limits access to mental health services for gender, racial, and ethnic minorities, or discourages them from seeking treatment, it will worsen mental health disparities in several ways. First, discrimination by MHPs further contributes to minority stress (Seng et al. 2012). Second, discrimination delays treatment, which negatively impacts health and increases treatment costs (Himelhoch et al. 2004). Third, difficulties in securing appointments lead many patients to discontinue the search for treatment altogether (James et al. 2016; Lambda Legal 2010). Fourth, discrimination may reduce match quality between the MHP and patient by forcing the patient to select a therapist who is trans-friendly but is otherwise not as suitable for the patient, e.g., less experienced in the patient's area of concern, further away, or more expensive (Mizock and Lundquist 2016). Patient-MHP mismatch negatively affects care since a high-quality match is crucial for effective care (Budge and Moradi 2018).

Despite ample observational evidence that TNB individuals face substantial mental health disparities and survey evidence that TNB individuals report facing significant discrimination by health care providers, no study has quantified the actual level of gender identity discrimination within the mental health care system against TNB individuals, and few studies quantify discrimination in any context in access to mental health care.

In this paper, we present the results of one of the first audit field experiments of discrimination in access to mental health care. Specifically, we request appointments for common mental health concerns (anxiety, depression, and stress) from mental health providers in the U.S., including psychologists, counselors, social workers, and psychiatrists, using a popular online website. In our appointment request emails, we randomly assign names to signal race or ethnicity (African American, Hispanic, or White). Additionally, a randomly selected group of fictitious

prospective patients disclose that they are transgender or non-binary by including the statement: "I am (a transgender woman)/(a transgender man)/(non-binary) and am looking for a trans-friendly therapist."[3] We include both an email address and a phone number where the MHP can contact the prospective patient in this appointment request. We quantify discrimination by comparing the MHP positive response rates (appointment, consultation, or phone call offer rates) by prospective patient gender identity, race, and ethnicity.

Our methodology of using an audit field experiment, the "gold standard" for measuring discrimination (Gaddis 2018; Bertrand and Duflo 2017), allows us to isolate discrimination holding all factors constant other than race, ethnicity, gender, and transgender status, since our appointment request emails are on-average identical other than our randomized signals of race, ethnicity, and transgender status. We also observe actual appointment offer decisions (without booking appointments), avoiding the typical difficulties with measuring discrimination using survey methods such as misreporting and social desirability bias (Gaddis 2018).

We find evidence that African American and Hispanic transgender and non-binary people face discrimination when attempting to access mental health care services. We do not find evidence of discrimination against White transgender and non-binary prospective patients. Similarly, due to statistical noise, our results are inconclusive as to if cisgender African American or Hispanic prospective patients face discrimination.

Our study makes important contributions to several literatures and policy topics. First, we conduct the first audit field experiment of gender identity discrimination in the U.S. health care system, and we are one of the few audit studies that tests for gender identity discrimination in any context (Abbate et al. 2022; Bardales 2013; Granberg, Andersson, and Ahmed 2020; Jansson and

[3] Disclosing trans status and inquiring about LGBTQ+-friendly providers is a common and recommended practice for TNB individuals seeking mental health services (Kassel 2018; Voutilainen et. al. 2018; Allen et. al. 2017).

Fritzson 2022; Rainey, Imse, and Pomerantz 2015; Levy at al. 2017). We also contribute to the small, but growing, literature in economics on gender identity and transgender people in general (Badgett, Carpenter, and Sansone 2021; Campbell and Rodgers 2022; Carpenter, Eppink, and Gonzales 2020; Carpenter, Lee and Nettuno 2022; Drydakis 2017a, 2017b; Drydakis and Zimmermann 2020; Geijtenbeek and Plug 2018; Harrell 2022; Leppel 2020, 2021; Mann 2021; Van Borm and Baert 2018; Van Borm et al. 2020).

Second, we are one of the few studies examining discrimination in access to mental health care in general. Several audit field experiments examine if MHPs discriminate based on race or socioeconomic status, but these studies focus on certain types of mental health providers (e.g., psychiatrists), a specific geographic location (see Kugelmass 2016), or have relatively small sample sizes (e.g., 300). We test a wider array of mental health care providers (including psychiatrists, psychologists, counselors, social workers, etc.) and are the first researchers to examine discrimination in a nationwide context.

Third, we contribute to a small, but quickly growing, literature in economics on intersectionality. To our knowledge, we are the first study to use experimental methods to examine how race, ethnicity, and gender identity interact. This adds to the limited experimental research on intersectional discrimination in general (Bourabain and Verhaeghe 2018; Francis, De Oliveira, and Dimmitt 2019; Lahey and Oxley 2021; Lauster and Easterbrook 2011; Pedulla 2014; Schwegman 2019).

## II. Mental Health Disparities among Racial, Ethnic, and Gender Minorities

There is a complex relationship between race, ethnicity, gender identity and mental health, with conflicting evidence on the direction of mental health disparities. Hispanic, African, and

Asian Americans report having lower current, last-year, and lifetime rates of major depression and other psychiatric disorders than Whites (Miranda et al. 2008; Williams 2018). However, when African American and Hispanics experience a mental disorder, their mental health episode tends to be more severe, persist for longer, and be more debilitating than Whites (Breslau et al. 2005). African Americans reporting an episode of depression are more likely to be chronically or persistently depressed, have more severe symptoms of depression, and be less likely to receive treatment (Williams 2018).

While the relationship between race, ethnicity, and mental health is complex, there is clear evidence that TNB people have worse mental health, higher rates of major psychiatric disorders, and higher substance misuse rates than the general population. TNB individuals report higher rates of suicidal ideation and attempted suicide, as well as significantly higher rates of clinical depression (Haas et al. 2011; Hoffman 2014; Mustanski, Garofalo, and Emerson 2010; Su et al. 2016).

Moreover, there is broad consensus that exposure to chronic and acute stressors—such as poverty, neighborhood violence, or discrimination—can negatively affect mental health (Pearlin et al. 2005). Racial and gender minorities face higher rates of "traditional" stress than Whites. Notably, they are more likely to be unemployed, uninsured, exposed to neighborhood violence, and involved in the criminal justice system (James et al. 2016; Williams 2018).

Economic precariousness, increased exposure to violence, social stigma, and explicit discrimination creates a unique set of psychological stresses for racial and gender minorities that is often referred to as "minority stress" (Hendricks and Testa 2012; Singh 2017). Minority stress correlates with worse mental health outcomes, including higher rates of distress and depression (Paradies et al. 2015).

Specifically, explicit discrimination and other stressors can negatively affect mental health through several different pathways. Discrimination can increase stress, which puts pressure on the body's cardiovascular system (Sawyer et al. 2012). Heightened violence is positively associated with depressive symptoms and contributes to the African American-White disparity in the severity of depression (LaVeist et al. 2014; Testa et al. 2012).

Moreover, structural and institutional racism can give rise to the "stress proliferation process" (Pearlin et al. 2005) in which an initial stressor can initiate or exacerbate stressors in other aspects of life (Williams 2018). Previous research finds evidence of racial discrimination in the labor market (Gaddis 2015; Pager and Shepherd 2008), the housing market (Gaddis and Ghoshal 2020; Hanson et al. 2016; Murchie and Pang 2018; Pager and Shepherd 2008), physical and online stores or marketplaces (Bourabain and Verhaeghe 2018; Doleac and Stein 2013; Pager and Shepherd 2008), and the public sector (Giulietti, Tonin, and Vlassopoulos 2019; Mujcic and Frijters 2020), among other areas and markets.

There is also evidence that TNB individuals face frequent discrimination in the labor market, in secondary and postsecondary schools, when accessing health care, when accessing housing, and in the criminal justice system (Baumle, Badgett, and Boutcher, 2020; Glick et al. 2019; Granberg, Andersson, and Ahmed 2020; Grant et al. 2011; Hanssens et al. 2014; James et al. 2016; Levy et al. 2017; Mallory, Hasenbush, and Sears 2015; Romero et al. 2016; Stotzer 2014; Stroumsa 2014). Systematic discrimination and inequality also contribute to economic insecurity, which is a significant source of stress (Williams 2018). Most concerning is the elevated rates of physical violences faced by TNB people, especially trans women – particularly trans women of color (Momen and Dilks 2021; Westbrook 2023).

For TNB individuals and cisgender racial minorities facing acute psychological stressors, counseling and therapy are effective and common strategies for helping with numerous mental health concerns, such as stress, anxiety, depression, and substance misuse. However, suppose providers of these mental health services discriminate against TNB individuals and racial minorities by restricting access to these services. In that case, this discrimination may partially cause and likely exacerbate underlying race and gender identity-related mental health disparities.

## III. The Discretion of Mental Health Care Providers in the United States

Mental health care providers (MHPs) supply and regulate access to mental health care services in the United States. There is no universally agreed-upon definition of a "mental health care provider," nor is there consensus over the exact composition of the U.S. mental health workforce (Heisler 2018). Numerous licensed professionals provide mental health care services, including primary care physicians, psychologists, psychiatrists, nurses, mental health and substance abuse counselors, family and marriage counselors, and social workers. Specific education and licensure requirements can vary from state to state, whereas other licensure requirements are more uniform across states. For example, to be a clinical psychologist requires a doctoral degree in psychology (Ph.D. or Psy.D) and passing a certification exam.

Regardless of their professional training and qualifications, MHPs have a significant degree of professional autonomy. MHPs are, for example, significantly more likely to be in solo practice than physicians or other healthcare providers. While only one in five physicians work by themselves, almost half of all MHPs operate their own businesses (Kane and Emmons 2013; Michalski, Mulvey, and Kohout 2010). Thus, MHPs face fewer formal and institutional constraints on their ability to make decisions consistent with their explicit or implicit biases.

Specifically, MHPs have significant discretion over *who* to provide services to, especially during periods where there may be higher demand for their services (e.g., during the COVID-19 pandemic). Previous experimental and observational studies establish that health care providers, including MHPs, make decisions about patients that are shaped by their perceptions of a patient's race, social class, and gender (Kugelmass 2016, 2019). For example, MHPs have been found to cultivate a group of desirable patients by "cream-skimming," or explicitly or implicitly choosing to provide services to a specific group of patients, such as patients based on gender or race homophily, type of services the patient is seeking (e.g., the severity of the mental illness), or insurance status, which can proxy for education, the likelihood and amount of payment, etc. (Teasdale and Hill 2006). Previous experimental audit and correspondence studies document cream-skimming based on a patient's socioeconomic status (Angerer, Waibel, and Stummer 2019; Kugelmass 2016; Olah, Gaisaino, and Hwang 2013), insurance status (Bisgaier and Rhodes 2011; Olin et al. 2016; Polsky et al. 2015; Rhodes et al. 2014; Werbeck, Wübker, and Ziebarth 2021), race (Leech, Irby-Shasanmi, and Mitchell 2019; Sharma, Mitro, and Stino 2015; Sharma et al. 2018; Wisniewski and Walker 2020; Wisniewski et al. 2021), and gender (Olah, Gaisaino, and Hwang 2013; Sharma, Mitro, and Stino 2015).

Cream-skimming could be rooted in different sources of discrimination, such as taste-based discrimination (e.g., MHPs are transphobic), statistical discrimination (MHPs use minority status to make assumptions about the prospective patient), or implicit bias (unconscious bias). An MHP could exhibit statistical discrimination in appointment allocation in numerous ways. First, MHPs could assume that TNB prospective patients are more likely to have a severe mental health issue, which requires more time and effort to treat and potentially poses greater liability. Alternatively, MHPs may perceive TNB individuals as less likely to be insured or being less able to pay standard

out-of-pocket rates.[4] Thus, MHPs could perceive TNB patients as less desirable, causing MHPs to respond less favorably to appointment inquiries from TNB prospective patients.

Mental health care providers may also hold implicit, unconscious biases about racial and gender minorities (Greenwald and Banaji 1995). Numerous studies find that health care providers hold implicit biases and stereotypes about racial minorities that result in unequal treatment (Green et al. 2007; McKinlay, Potter, and Feldman 1996). Few studies document implicit stereotypes about gender identity. However, a recent study found that people tend to express implicit and explicit preferences for cisgender over transgender people (Axt et al. 2020).

## IV. Experimental Design

In this section, we outline the details of our experimental design. We discuss and address human subjects research protections and considerations in Online Appendix A.

### IV.A) Sampling Frame

We use a popular online therapist search database to collect our sample of auditable MHPs. In order to be included in our sample, an MHP: (1) must not specialize exclusively on patient populations who are outside of the scope of our experiment (e.g., children, adolescents, or couples therapy), (2) must not be specialized in a type of therapy (e.g., grief, domestic violence) that would not deal with the common mental health conditions that we signal: anxiety, depression, and stress, (3) must list an individual's profile (not a multi-provider clinic), (4) must provide an email option through a web form (the primary way MHPs are contacted on the platform), and (5) must be accepting new patients. After accounting for these characteristics, we select MHPs proportionately

[4] Several studies find that TNB individuals are less likely to have health insurance (Carpenter, Eppink, and Gonzales 2020; James et al. 2016; Liszewski et al. 2018) and have lower income (Badgett, Carpenter, and Sansone 2021; Carpenter, Eppink, and Gonzales 2020), which could lead to MHPs statistically discriminating on this basis.

to state populations. Within states, we select MHPs proportionally to the population of each ZIP code such that our final sample is nationally representative.

Based on an expected sample size of 1,000 MHPs, we conduct several power analyses to estimate the minimal detectable effect size for each of our hypotheses, which we treat as independent tests. We assumed a response rate of between 60 and 70 percent, which is consistent with other previous audit studies. We also assumed a type 1 error rate ($\alpha$) of 0.5 and power ($1 - \beta$) of 80 percent. Our minimum detectable effect (MDE) is between. 3.5 and 4.0 percentage points, which is quite small, but previous audit studies, especially those examining race, have found similar effect sizes. However, given our limited power, we take a number of steps, which we outline below, to conserve power, increase precision, and avoid making conclusions from potentially underpowered analyses.

**IV.B) Prospective Patient Inquiry Emails**

If a mental health care provider meets the inclusion criteria for this experiment, we send a message to them through an "Email Me" webform. In these emails, we use names to signal the fictitious prospective patient's race, ethnicity, and gender. We randomly assign various other aspects of the email to signal TNB status and mental health concern. Figure 1 provides the general structure of our appointment inquiry emails, and Figure 2 summarizes the randomized options that we assign to each email.

To signal race and gender, we use names from two previous audit studies (Barlow and Lahey 2018; Gaddis 2017a). We present these names in Figure 2, box 2. Each name is either stereotypically masculine (signaling that the sender identifies as a male) or feminine (signaling that the sender identifies as female). We assign transgender and cisgender women (men) a feminine

(masculine) first name. Non-binary prospective patients are assigned either feminine names or masculine names with equal probability.[5]

Each MHP receives one inquiry from one prospective patient who identifies either as transgender (25 percent of the time), non-binary (25 percent of the time), or cisgender (50 percent of the time). Specifically, TNB prospective patients include the following statement in their appointment request email: "*I am [a transgender woman]/[a transgender man]/[non-binary] and I am looking for a therapist who is trans-friendly."*[6] Cisgender prospective patients do not include any statement about gender identity or their cis/trans status and are thus presumed to be cisgender.

We selected names that clearly signal gender, race (African American or White), and ethnicity (Hispanic) from Barlow and Lahey (2018) and Gaddis (2017a). These are also names that are less likely to signal higher or lower socioeconomic status.[7] Figure 2 presents these names. We randomly assign an MHP to receive an inquiry containing a White name approximately 50 percent of the time, an inquiry containing an African American name approximately 25 percent of the time, and an inquiry containing a Hispanic name approximately 25 percent of the time.

We also randomly assign one of the following mental health conditions: stress, anxiety, or depression. We use these conditions since they are the most common, virtually all MHPs are

[5] Many non-binary people keep their names assigned at birth or otherwise have names that are more feminine or masculine, especially since few names are non-gender specific. We also avoided assigning non-gendered names because we did not want to introduce another treatment arm.

[6] We believe that signaling TNB status in this way is common and externally valid. For a TNB individual seeking mental health services, finding a therapist who will not discriminate against them (i.e., a "trans-friendly" therapist) or stop them from being transgender is essential. Almost 1 in 10 respondents to the 2015 U.S. Transgender Survey report that at least one MHP has tried to stop them from being TNB (James et al. 2016). Those who have experienced a professional try to stop them from being TNB report worse mental health outcomes, including higher rates of psychological distress and attempted suicide. Disclosing transgender status and inquiring about trans-friendly services is common and is recommended by experts who provide advice on how to find trans-affirming care (e.g., Kassel 2018; Voutilainen et. al. 2018; Allen et. al. 2017).

[7] Using these names helps us partially confront the criticism that using African American first names to signal race over-estimates discrimination and confuses racial discrimination for socio-economic status discrimination because some names also have negative socioeconomic status signals (Barlow and Lahey 2018; Gaddis 2017a; 2017b). These names are those that are linked to median maternal education, thus ruling out relatively higher and lower socio-economic status first names while still having been tested to signal race and ethnicity.

qualified to treat them, and they do not suggest that the mental health concern is trans-specific. We focus this study on quantifying access to mental health care for common mental health conditions rather than quantifying access to trans-specific care, a separate research question requiring a different research design.

### IV.C) Coding Mental Health Provider Responses

Each appointment request email contained both the fictitious patient's email address and phone number. MHPs are thus able to respond via email, phone, or text message. We consider a (non-automated) email, text message, or voicemail to be a response.[8]

We coded each MHP response into one of the following seven mutually exclusive outcome categories: appointment offered, call or consultation offer, screening question(s) (e.g., can you pay out of pocket?), referral, waitlist, rejection, and no response. These seven, mutually exclusive categories[9] capture the variation in the quality of response. See Table 1 for a more detailed description of each outcome.

To improve power and increase interpretability, we collapse these response categories into a binary variable, called a "positive response." We deem appointment offers, consultation offers, and call offers to be positive responses (value of one), with all other responses (only asks a screening question, only offers a referral or a waitlist, or is a rejection) and a non-response to be negative responses (value of zero).[10]

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[8] We record MHP's phone numbers and cross-reference those with any missed calls, but we find only perhaps one instance of an MHP calling without leaving a voicemail.

[9] MHPs of course often provide more than one type of response, such as a referral and a consultation offer. If an MHP's response falls into more than one category, it is coded as the best category. For example, a referral and a consultation offer are coded as consultation offer, and a rejection and a referral is coded as a referral.

[10] This is the same binary categorization as Kugelmass (2019). Categorizing responses as positive or not positive is a standard approach in audit studies (Neumark, Burn, and Button 2019). Our results are generally similar if we use an alternative binary categorization that re-codes screening questions and referrals as positive responses. We discuss these results in a robustness sub-section within the results section (see Online Appendix Tables B2 to B8).

## V. Empirical Strategy

We will first present simple descriptive breakdowns in response rates by groups, and then we will use regression analysis to better quantify differences in outcomes. In our regressions, we start by testing for differences in our broader categories using the binary "positive" outcome variable. Our preferred linear probability model[11] is as follows:

$$Positive_{idws} = \beta_0 + \beta_1 TransorNonBinary_i + \beta_2 AfricanAmerican_i + \beta_3 Hispanic_i + \beta_4 Depression_i + \beta_5 Anxiety_i + Day_d\gamma + Week_w\delta + State_s\theta + \varepsilon_{idws} \quad [1]$$

where *i* indexes for the email inquiry (and each MHP), *d* indexes for the day of the week (e.g., Monday, Tuesday) the inquiry was sent, *w* indexes for the week the inquiry was sent, and *s* indexes for the MHP's state. $Positive_i$ equals one for positive responses to the appointment inquiry (appointment offer or call or consultation offer), and $TransorNonBinary_i$, $AfricanAmerican_i$, and $Hispanic_i$ are indicator variables for each randomized patient characteristic, with the excluded category being cisgender White patients. $Depression_i$ and $Anxiety_i$ capture differences in the positive response rate between those who mention depression or anxiety in their appointment request, compared to those who just mention having stress. We include state fixed effects ($State_s$), day of the week fixed effects ($Day_d$), and week fixed effects ($Week_w$). We cluster our standard errors at the patient level since, while each MHP only gets one email, each patient emails multiple MHPs in their area. (For further discussion of how we test for independence across these characteristics, see Online Appendix Figure B1 and its notes.)

[11] Our main results are similar using a probit model (see Online Appendix Table B1).

We then extend equation [1] to explore intersectional groups, such as prospective patients by type of TNB identity (e.g., transgender wo(men) vs. cisgender wo(men) vs. non-binary people) and by race, ethnicity, and gender identity intersectionality (e.g., trans people of color).

## VI. Main Results

### VI.A) Raw Data Positive Response Rate Differences

Between January 28, 2020, and May 15, 2020, we sent appointment requests to 1,000 different MHPs. We receive non-automated responses to 75.5 percent of all our inquiries. Table 1 categorizes the responses (or non-response) into our seven mutually exclusive outcome categories, and then into our "positive response" binary outcome variable. We received a positive response—either an appointment offer (33.3 percent) or a call or consultation (23.3 percent)—for 56.6 percent of our inquiries. We do not receive a response 24.5 percent of the time, which was by far the most common negative response. See Table 1 for the full summary statistics on our outcomes.

In Table 2, we report simple descriptive statistics of our binary "positive response" outcome variable. In the top panel, we report raw differences in positive response rates between cisgender and TNB prospective patients. We find that cisgender prospective patients received a positive response 60.6 percent of the time while TNB prospective patients only received a positive response 52.8 percent of the time—a statistically significant 7.8 percentage point difference ($p = 0.013$ using a two-sided Fisher's Exact test).

In the bottom panel of Table 2, we compare positive response rates by our finer categorizations of gender identity. Cisgender men have the highest positive response rate (61.6 percent) followed by cisgender women (58.8), transgender women (55.8), non-binary people (51.9), and transgender men (50.7). These finer categorizations have less precision, given our smaller sample size, so only the response rate difference between cisgender and transgender men—

where transgender men have a 10.9 percentage point lower response rate—is statistically significant ($p = 0.03$).

Table 3 presents positive response rates by race and ethnicity. White prospective patients have the highest positive response rate (58.0 percent) followed by African American (55.5) and Hispanic prospective patients (54.8). None of these differences are statistically significant in this raw data.

Lastly, in Table 4, we present positive response rates for cisgender prospective patients broken down by race and ethnicity in the top panel, and we present this breakdown for TNB prospective patients in the bottom panel. We find that cisgender prospective patients have a higher response rate compared to their same race/ethnicity TNB counterparts: cisgender African Americans have a higher positive response rate (60.7 percent) than TNB African Americans (50.0 percent, $p = 0.077$), and cisgender Whites have a higher positive response rate (61.5 percent) than TNB Whites (54.2, $p=0.096$). We find the largest positive response rate differences by comparing TNB African Americans and Hispanics to cisgender Whites. TNB African Americans face the lowest positive response rate (50.0 percent) compared to cisgender Whites, who face the highest rate (61.5, $p = 0.030$). For TNB Hispanics, this response rate is 53.3 percent ($p = 0.105$). Thus, it appears that more of the discrimination is intersectional: we find no statistically significant differences in raw response rates between Whites, African Americans, or Hispanics *within* the same TNB/cisgender status, but we do find differences by race and ethnicity *across* TNB/cisgender status.

### VI.B) Regression Analysis of Positive Response Rate Differences

Table 5 presents regression estimates of the differences in response rate by race, ethnicity, and TNB status from Equation [1]. In all regressions, cisgender White prospective patients serve as the comparison group. In columns (1) and (2), which do not include any control variables or

fixed effects, we find that prospective patients who signal transgender or non-binary status have between a 6.5 and 7.5 percentage point lower positive response rate, but there are no differences between White, African American, and Hispanic prospective patients. These results mirror the raw differences in positive response rates seen in Tables 2 and 3.

Next, we add fixed effects—state fixed effects in column (3), state and week fixed effects in column (4), and state, week, and day of week fixed effects in column (5). Column (5) is our preferred specification in Table 5. These fixed effects control for random variation from the time that the emails were sent and random variation from the MHP's state of practice (although these are random with respect to prospective patient characteristics). Focusing on our preferred specification in column (5), we find no evidence of differential positive response rates between cisgender-assumed patients and those who directly signal TNB status. MHPs are, however, significantly less likely to respond to African Americans (13.3 percentage points) and or Hispanics (13 percentage points). Moreover, compared to stress, MHPs are more likely to respond to prospective patients who report depression (14.6 percentage points).

In Table 6, we gradually disaggregate the TNB signal into separate transgender and non-binary signals. First, we present our results presented in column (5) in Table 5 the first column of Table 6 to allow for comparisons. Then, we separate the TNB indicator into distinct indicators for binary transgender (transgender women and transgender men) and non-binary individuals (column (2)). Column (3) further disaggregates the TNB and cisgender indicators into separate indicators for: transgender women, transgender men, non-binary individuals, cisgender women, and cisgender men. Finally, column (4) splits non-binary individuals into those with feminine first names and masculine first names. All these regressions include the control variables from our preferred specification (column (5) in Table 5). Regardless of how we divide the TNB population,

we do not find any differences within TNB subgroups, or between TNB subgroups and cisgender prospective patients. However, we do find that cisgender women are about 10.8 percentage points less likely to receive a response compared to cisgender men (columns (4) and (5)), significant at the 5 percent level.

In Table 7, we disaggregate cisgender and TNB people by race and ethnicity to quantify any intersectional discrimination, a trend we saw in the raw data in Table 4. Column (1) of Table 7 again reports baseline estimates from our preferred specification in column (5) of Table 5. Column (2) reports differences in response rates for African Americans, Hispanics, and Whites, by TNB status. We find that White TNB prospective patients are about 10.0 percentage points *more* likely to receive a positive response compared to White cisgender prospective patients (statistically significant at the 10 percent level). However, African American TNB prospective patients are 13.3 percentage points *less* likely to receive a positive response compared to White cisgender prospective patients (significant at the 5 percent level). Similarly, Hispanic TNB prospective patients have a 10.3 percentage point lower response rate, although this difference is not statistically significant.

Comparing cisgender prospective patients by race and ethnicity, we find that African American (Hispanic) cisgender prospective patients have a positive response rate that is 2.4 (3.2) percentage points lower compared to cisgender White prospective patients. However, neither of these estimates are statistically significant.[12] So, while we again find evidence of intersectional

[12] Though the estimate on the coefficient for Hispanic identity becomes statistically significant if we restrict our sample to only to MHPs in combined Midwest, Northeast, and Western states (by U.S. Census Region), estimates for African American identity remain noisy regardless of regional restriction. Moreover, we uncover economically and statistically significant estimates of discrimination against TNB individuals when we restrict our regressions to the Southern Census region. Taken together, these results, which are presented in Appendix Table B9, suggest that regional mental healthcare markets play a large role in the discriminatory barriers faced by gender, racial, and ethnic minorities. However, our estimates for intersectional discrimination are less precise under this stratification exercise (reported in Appendix Table B10. Taken together, these results suggest that raw regressions, which do not take into

discrimination, our evidence is inconclusive as to if there is racial and ethnic discrimination against cisgender prospective patients given the imprecision of our estimates.

Table 8 further disaggregates African American, Hispanic, and White TNB and cisgender prospective patients by gender, again separating the broad TNB category into transgender women, transgender men, and non-binary, and cisgender into cisgender women and cisgender men, all by race and ethnicity. Table 8 again shows evidence of intersectional discrimination. For all African American and Hispanic TNB groups, we find large negative coefficient estimates, although only sometimes are they statistically significant – likely reflecting our reduced statistical power from splitting the sample further. The two statistically significant estimates are that Hispanic transgender women are 36.0 percentage points less likely to receive a positive response and African American non-binary prospective patients have a 39.7 percentage point lower positive response rate (both significant at the 1 percent level).

Table 8 also shows few differences among cisgender prospective patients, although there is evidence of intersectional discrimination again, in this case against cisgender African American women. Table 8 shows a 9.8 percentage point higher positive response rate for cisgender African American men and a 13.1 percentage point lower positive response rate for cisgender African American women. While neither of those two estimates are statistically significantly different from cisgender White men, we do find that these two coefficients are statistically significantly different from each other ($p = 0.029$). We also find a similar difference between the response rates of cisgender White women and cisgender African American women ($p = 0.094$). This suggests that cisgender African American women face more discrimination relative to cisgender African American men and cisgender White women. Gender differences for Hispanic and White

account geographical variation, are missing an important geographic feature in the distribution of discriminatory behavior.

prospective patients are far less stark, with the differences in coefficients being smaller and coefficient estimates being noisier and never statistically significant.

## VII. Robustness Checks

We conduct several robustness checks to determine if our results are sensitive to reasonable alternative specifications. In Online Appendix Table B1, we find that our main results in Table 5 are robust to using a probit instead of a linear probability model. Next, in Online Appendix Tables B2 to B8, we test if our results are robust to collapsing our seven mutually exclusive response categories into an alternative "positive response" binary outcome variable, shown in Table 1. In our main results above, we follow Kugelmass (2019) and only consider positive responses to be explicit appointment offers or call or consultation offers. However, two types of MHP responses: asking screening questions and providing referrals (both without any appointment, call, or consultation offer), are arguably more ambiguous.[13] To address this, we re-estimate our main results using an alternative positive outcome variable that re-codes screening questions and referrals as positive rather than negative responses.

Online Appendix Tables B2 through B8 show our results using this broader "positive response" coding. Overall, our results are similar across all tables except that our main result of intersectional discrimination and African American and Hispanic TNB prospective patients is

[13] Screening questions could indicate a barrier to access, such as providers being differentially more concerned about insurance status for minorities (e.g., Wisniewski and Walker, 2020). They may also be considered neutral or positive if, for example, the MHP asks if the concerns are trans-specific. Referrals are also likely to indicate a barrier to access (Kugelmass 2019), but it depends on why a referral is provided. Many referrals are essentially "soft" appointment rejections, it is possible that the alternative provider is better for the prospective patient. While we try to avoid these types of referrals by not suggesting that the common mental health concerns are trans- or race-specific, these referrals are ambiguous in nature and then we re-analyze our results also considering these responses as "positive."

slightly weaker. Our broader result—that discrimination or barriers to access are primarily faced by transgender or non-binary people of color—is unchanged with this alternative binary coding.

## VIII. Additional Robustness: The Impact of COVID-19 on Access and Discrimination

This study began several months before and continued for several months after the beginning of the COVID-19 pandemic in March 2020. Given this, it is important to determine to what extent our results may have been affected by COVID-19. We test if COVID-19 affected appointment access more generally, building off Harrell et al. (2023) and if COVID-19 intensity moderated the discrimination observed in the earlier results that did not specifically control for within-state variation in COVID-19.

### VIII.A) COVID-19 Data and COVID-19 Intensity Over Time

Following Harrell et al. (2023), we use data on daily COVID-19 infections and deaths from the New York Times (New York Times 2020) and the number of excess deaths calculated by the Centers for Disease Control and Prevention (CDC 2020) to generate proxy measures for COVID-19 intensity. Building on this work, we first start by plotting, in Figure 3, our COVID-19 intensity measures, at the national level, compared to our positive response rate for each week of our data collection, which ran from January 28, 2020, to May 15, 2020. To compare trends more easily between our positive response rate and our COVID-19 intensity measures (COVID-19 cases, COVID-19 deaths, excess deaths), given their wildly different units and scale, we normalize each to the 0-to-1 range by applying a standard unity normalization (see the notes to Figure 3). Figure 3 shows a temporary decrease in the positive response rate around the time of the COVID-19 national emergency declaration by the White House on March 13, 2020. Once COVID-19 cases, deaths, and excess deaths started in late March 2020 onward, we see a negative correlation between

more COVID-19 intensity, nationally, and the positive response rate. This is suggestive that COVID-19 may have decreased access to mental health care appointments.

To examine how state-level COVID-19 intensity relates to positive response rates, we re-estimate equation (1) including different measures of COVID-19 intensity and with contemporaneous, 1-week, 2-week, and 3-week lagged COVID-19 intensity measures. Similar to Harrell et al. (2023), we detail in Online Appendix Tables C9-12 weak evidence of a negative relationship between COVID-19 intensity (as measured alternately by daily cases and deaths vs. weekly excess deaths) and positive response rates, and mixed evidence of differential effects of COVID-19 on positive response rates by demographic groups. However, we urge caution when interpreting these results, particularly for how COVID-19 moderates discrimination by group, given that we are likely underpowered to detect such results given our sample size. Overall, our main conclusion – that discrimination occurs against African American and Hispanic TNB prospective patients – is robust to the inclusion of controls for state-level COVID-19 intensity.

## IX. Conclusion and Discussion

We conduct an audit correspondence field experiment using a nationally representative sample of mental health providers (MHPs) in the United States to test for discrimination in access to mental healthcare appointments based on gender identity, race, and ethnicity. To date, this is the largest audit study of mental health care providers, and it is the only study we are aware of that uses a casual inference methodology to quantify gender identity discrimination in access to healthcare.

We have several central findings. First, we find consistent evidence that MHPs are less likely to offer appointments or respond to African American or Hispanic transgender and non-

binary prospective patients. This is particularly problematic given the mental health disparities faced by TNB individuals, people of color, and particularly, TNB people of color. Given that these minority groups are, on average, in greater need for mental health services, discrimination by MHPs can have profound mental and physical health consequences.

Second, we do not find evidence of discrimination against White transgender and non-binary individuals. We either find no difference in response rates between White TNB prospective patients and White (presumed) cisgender prospective patients, or we find that White TNB prospective patients have a *higher* positive response rate.

Third, our results are mostly inconclusive as to whether (presumed) cisgender African American or Hispanic prospective patients face discrimination in access to appointments relative to their White and cisgender counterparts. While the response rates for cisgender African American (60.7%) and Hispanic (57.5%) prospective patients are not statistically significantly different from cisgender Whites (61.6%), these estimates are not precise (large confidence intervals) and thus we cannot rule out meaningful amounts of discrimination even if the estimates are near zero. Indeed, given the relatively small cell sizes for cisgender African American (n = 140) and Hispanic (n = 80) prospective patients and the more pronounced effects we find for all African American and Hispanic prospective patients, and given the minimum detectable effect derived in our power analyses, it is possible that these estimates are Type-II errors ("false negatives"). Future research with a larger sample size, and thus more statistical power, would be better able to determine to what extent there is this discrimination. We do, however, find that cisgender African American women face discrimination relative to cisgender White women and cisgender African American men.

Finally, we urge caution that our estimates should be considered the most conservative estimates of discrimination in access to mental healthcare for racial, ethnic, and gender minorities. The design of this experiment is only sufficient to detect the discrimination at the earliest point in the continuum of mental healthcare: the first point of contact with an MHP. Discrimination may also occur, for example, in diagnosis, billing, or treatment, and while detecting those forms of discrimination is beyond the scope of this study, future work should consider these possible vectors of discrimination for a more comprehensive view of the barriers to entry faced by racial, gender, and ethnic minorities.

Our results have meaningful policy implications. First, our results inform discussions around oversight and regulation of the MHP markets, which occurs through federal and state anti-discrimination laws, state licensing regulations, and professional association policies. Second, our results speak to the undersupply of LGBTQ+-competent MHPs (Romanelli and Hudson 2017) and BIPOC MHPs (Chandler 2011), and inform discussions around diversifying the profession and improving training (DeBlaere et al.2019; dickey and Singh 2016; Lelutiu-Weinberger, Clark, and Pachankis, 2022; Newell et al. 2010; Singh and dickey 2016). Third, our research on discriminatory barriers faced by transgender and BIPOC people in access to mental health care is increasingly relevant as many governments, particularly those in the U.S., are passing anti-LGBTQ+ legislation that could negatively affect mental health (Mann 2023) and also reduce access to health care.

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**Figure 1: Structure of the Appointment Request Emails to MHPs**

1.) **[EMAIL SUBJECT LINE]**

Hi,/Hello,

My name is 2) **[NAME]**. (I'm contacting you because) 3) **[MENTAL HEALTH CONCERN]** (and would like to talk to a therapist). *If transgender or non-binary:* I am 4) **[GENDER IDENTITY]** and am looking for a therapist who is trans-friendly. 5) **[APPOINTMENT REQUEST]**.

6) **[VALEDICTION]**

2) **[NAME]**

*Legend: ( ): denotes motivating verbiage, not exact phrasing*

*[ ]: denotes randomized input*

**Figure 2: Randomized Components of the Appointment Request Emails to MHPs**

1) **[EMAIL SUBJECT LINE]**

-Seeking therapy

-Looking for a therapist

- Therapy inquiry

3) **[MENTAL HEALTH CONCERN]**

-I've been feeling anxious lately.

-I've been feeling stressed all the time.

-I think I might be depressed.

4) **[GENDER IDENTITY]**

-a transgender woman

-a transgender man

-non-binary

2) **[NAME]**

| *Afr.-Am.* | *Hispanic* | *White* |
|---|---|---|
| *Male-Coded First Names* | | |
| Darius | Alejandro | Brian |
| DeShawn | Luis | Kevin |
| *Female-Coded First Names* | | |
| Ebony | Mariana | Amanda |
| Lakeisha | Valentina | Heather |
| *Last Names* | | |
| Washington | Hernandez | Anderson |
| Jefferson | Garcia | Thompson |

5) **[APPOINTMENT REQUEST]**

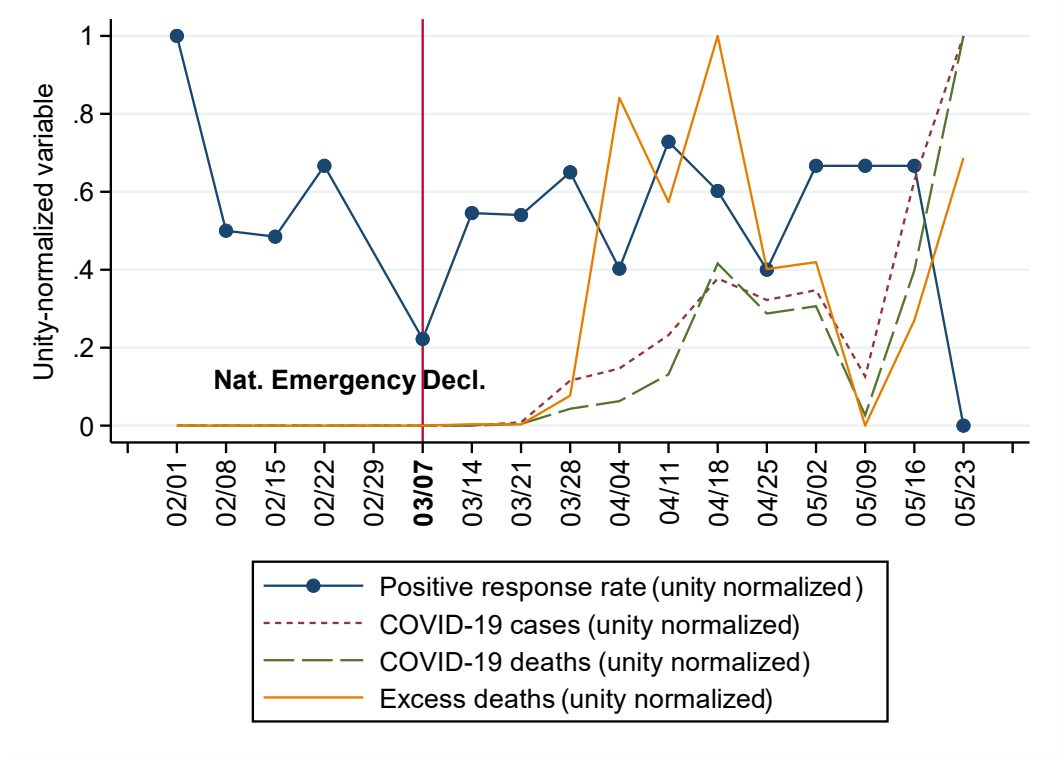
-Can we set up an appointment? -When could I see you?

6) **[VALEDICTION]**

-Sincerely, -Thanks, -Best, -[None]

*Notes:* Ethnic and race specific first names are from Barlow and Lahey (2018), Gaddis (2017)

**Figure 3: COVID-19 Intensity Measures and Positive Response Rates Over Time**




*Notes:* To calculate each time series, we calculate weekly positive response rates, COVID-19 cases, and COVID-19 deaths. We then apply a unity normalization (also known as min-max feature scaling) to all variables, which allows them to be more easily compared over time, given the wildly different units for each variable. Each variable is normalized to a range of 0-to-1, using the formula $Y' = \frac{Y - Y_{min}}{Y_{max} - Y_{min}}$.

**Table 1: Descriptive Statistics and Coding of MHP Responses into Positive Outcome Variables**

| | | Binary Coding | | | Gender Identity | | Race and Ethnicity | | |
|---|---|---|---|---|---|---|---|---|---|
| **Outcome** | **Description** | *Default* | *Alt.* | *Overall* | *Cisgender* | *Trans or non-binary* | *White* | *African American* | *Hispanic* |
| Appointment Offer | The MHP explicitly offers an appointment. | + | + | 33.3% | 33.2% | 33.4% | 33.4% | 32.4% | 34.0% |
| Call or Consultation Offer | The MHP offers to speak on the phone but does not offer an appointment. | + | + | 23.3% | 27.3% | 19.6% | 24.6% | 23.2% | 20.5% |
| Screening Question | The MHP requests additional information but does not offer an appointment. | - | + | 6.0% | 7.1% | 5.0% | 5.9% | 7.0% | 5.0% |
| Referral | The MHP gives a referral, but does not offer an appointment. | - | + | 4.8% | 3.8% | 5.8% | 4.9% | 5.9% | 3.2% |
| Waitlist | The MHP offers to put the prospective patient on a waitlist. | - | - | 2.1% | 1.3% | 2.9% | 2.1% | 0.7% | 0.4% |
| Rejection | The MHP rejects the prospective patient and does not offer an alternative provider. | - | - | 6.0% | 6.5% | 5.6% | 5.8% | 6.6% | 5.5% |
| No Response | No response from the MHP within one week. | - | - | 24.5% | 20.9% | 27.6% | 23.0% | 24.0% | 28.2% |
| | | | N | 1,000 | 480 | 520 | 500 | 270 | 230 |

*Notes:* These categorizations are mutually exclusive. For example, a response is coded as an appointment offer even if a referral is also provided. Our default binary coding treats appointment offer and call or consultation offer as the only positive outcomes, while our alternative binary coding also considers screening questions and referrals as positive outcomes.

**Table 2. Positive Response Rates by Gender Identity**

| Response Rates by Trans/Cis Status: | Positive | Negative | Total | | |
|---|---|---|---|---|---|
| Cisgender | 60.6% (291) | 39.4% (189) | 480 | | |
| Transgender or Non-binary | 52.8% (275) | 47.2% (245) | 520 | | |
| Total | 56.6% (566) | 43.4% (434) | 1,000 | | |
| | | | | | |
| Test of independence, difference [p-value] | 0.077 [0.013] | | | | |
| | | | | | |
| Response Rates by Gender Identity: | | | | | |
| Cisgender Men | 61.6% (191) | 38.4% (119) | 310 | | |
| Cisgender Women | 58.8% (100) | 41.2% (70) | 170 | | |
| Transgender Men | 50.7% (71) | 49.3% (69) | 140 | | |
| Transgender Women | 55.8% (95) | 44.2% (75) | 170 | | |
| Non-binary | 51.9% (109) | 48.1% (101) | 210 | | |
| | | | | | |
| Tests of independence, difference [p-value] | Cis men | Cis women | Trans men | Trans women | Non-binary |
| Cisgender Men | … | | | | |
| Cisgender Women | 0.028 [0.551] | … | | | |
| Transgender Men | 0.109 [0.030] | 0.081 [0.154] | … | | |
| Transgender Women | 0.057 [0.222] | 0.029 [0.585] | -0.052 [0.365] | … | |
| Non-binary | 0.097 [0.028] | 0.069 [0.179] | -0.012 [0.828] | 0.039 [0.441] | … |

*Notes:* Responses are coded as positive if the MHP's response was an appointment offer or a call or consultation offer. P-values come from a t-test (two-sided). Differences are rounded to the third decimal point and computed as (positive response rate from group in column y – positive response rate from group in row x).

**Table 3. Positive Response Rates by Race or Ethnicity**

| | Positive | Negative | Total |
|---|---|---|---|
| White | 58.0% (290) | 42.0% (210) | 500 |
| African American | 55.5% (150) | 45.5% (120) | 270 |
| Hispanic | 54.8% (126) | 45.2% (104) | 230 |
| Total | 56.6% (566) | 43.4% (434) | 1,000 |

| Tests of independence, difference [p-value] | White | African American | Hispanic |
|---|---|---|---|
| White | … | … | … |
| African American | -0.024 [0.514] | … | … |
| Hispanic | -0.032 [0.415] | 0.008 [0.862] | … |

*Notes:* Responses are coded as positive if the MHP's response was an appointment offer or a call or consultation offer. P-values come from a t-test (two-sided). Differences are rounded to the third decimal point and computed as (positive response rate from group in column y – positive response rate from group in row x).

**Table 4. Positive Response by Race or Ethnicity, for Cisgender and Transgender or Non-Binary Patients Separately**

| Response rates for cisgender only: | Positive | Negative | Total |
|---|---|---|---|
| White | 61.5% (160) | 38.5% (100) | 260 |
| African American | 60.7% (85) | 39.3% (55) | 140 |
| Hispanic | 57.5% (46) | 42.5% (34) | 80 |
| Total | 60.6% (291) | 39.4% (189) | 480 |

| Test of independence, difference [p-value] | White | African American | Hispanic |
|---|---|---|---|
| White | … | … | … |
| African American | 0.008<br>[0.872] | … | … |
| Hispanic | 0.040<br>[0.519] | 0.032<br>[0.642] | … |

| Response rates for transgender or non-binary only: | | | |
|---|---|---|---|
| White | 54.2% (130) | 47.8% (110) | 240 |
| African American | 50.0% (65) | 50.0% (65) | 130 |
| Hispanic | 53.3% (80) | 46.7% (70) | 150 |
| Total | 52.9% (275) | 47.1% (245) | 520 |

| Test of independence, difference [p-value] | White | African American | Hispanic |
|---|---|---|---|
| White | … | … | … |
| African American | 0.042<br>[0.445] | … | … |
| Hispanic | 0.008<br>[0.873] | -0.033<br>[0.579] | … |

| Transgender or non-binary vs. Cisgender: Tests of independence, difference [p-value] | Cisgender White | Cisgender African American | Cisgender Hispanic |
|---|---|---|---|
| Transgender or Non-binary White | 0.073<br>[0.096] | … | … |
| Transgender or Non-binary African American | 0.115<br>[0.030] | 0.107<br>[0.077] | … |
| Transgender or Non-binary Hispanic | 0.082<br>[0.105] | … | 0.042<br>[0.547] |

*Notes:* Responses are coded as positive if the MHP's response was an appointment offer or a call or consultation offer. P-values come for a t-test (two-sided). Differences are rounded to the third decimal point and computed as (positive response rate from group in column y – positive response rate from group in row x).

**Table 5: Differences in Positive Response Rates, Results for Aggregated Groups and by Mental Health Concern**

| | (1) | (2) | (3) | (4) | (5) |
|---|---|---|---|---|---|
| Transgender or non-binary | -0.0761** | -0.0674* | -0.0348 | -0.0240 | 0.0260 |
| | (0.0375) | (0.0366) | (0.0432) | (0.0443) | (0.0405) |
| African American | -0.0243 | -0.0225 | -0.1089** | -0.1148** | -0.1302*** |
| | (0.0444) | (0.0431) | (0.0432) | (0.0440) | (0.0364) |
| Hispanic | -0.0191 | -0.0274 | -0.0209 | -0.0458 | -0.1072** |
| | (0.0462) | (0.0472) | (0.0526) | (0.0545) | (0.0481) |
| Depression | … | -0.0205 | 0.0449 | 0.0641 | 0.0925 |
| | | (0.0416) | (0.0503) | (0.0534) | (0.0570) |
| Anxiety | … | -0.1039** | -0.0012 | 0.0233 | 0.0114 |
| | | (0.0493) | (0.0524) | (0.0532) | (0.0505) |
| State fixed effects: | | | X | X | X |
| Week sent fixed effects: | | | | X | X |
| Day of the week sent fixed effects: | | | | | X |
| N | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| Adjusted $R^2$ | 0.00360 | 0.00783 | 0.0293 | 0.0303 | 0.0421 |

*Notes:* Regression estimates based on the linear probability model in equation (1). The mean positive response rate for the excluded group (cisgender White prospective patients) is 61.5%. Standard errors, clustered at the patient level, in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

**Table 6: Differences in Positive Response Rates, Results by Gender Identity**

| | (1) | (2) | (3) | (4) |
|---|---|---|---|---|
| Transgender or non-binary | 0.0260<br>(0.0405) | … | … | … |
| …Binary transgender | … | 0.0319<br>(0.0459) | … | … |
| …Trans women | … | … | 0.0004<br>(.0577) | 0.0072<br>(0.0587) |
| …Trans men | … | … | -0.008<br>(.0634) | -0.0047<br>(0.0641) |
| …Non-binary | … | 0.0116<br>(0.0611) | -0.0209<br>(0.0634) | … |
| …Non-binary female first name | … | … | … | -0.0391<br>(0.0788) |
| …Non-binary male first name | … | … | … | 0.0091<br>(0.0885) |
| Cisgender women | … | … | -0.1005**<br>(.0483) | -0.1009**<br>(0.0487) |
| All African American | -0.1302***<br>(0.0364) | -0.1310***<br>(0.0360) | -0.1471***<br>(0.0371) | -0.1446***<br>(0.0374) |
| All Hispanic | -0.1072**<br>(0.0481) | -0.1072**<br>(0.0487) | -0.0996**<br>(0.0439) | -0.1039**<br>(0.0452) |
| N | 1,000 | 1,000 | 1,000 | 1,000 |
| Adjusted $R^2$ | 0.0421 | 0.0412 | 0.0409 | 0.0400 |

*Notes:* All regressions include the controls in column (5) of Table 5: mental health concern (depression, anxiety, stress), state fixed effects, day of the week sent fixed effects, and week sent fixed effects. Column (1) repeats the results from column (5) in Table 5 for ease of interpretation. The mean positive response rate for the excluded group (cisgender White men) is 68.3%. Standard errors, clustered at the patient level, in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

**Table 7: Differences in Positive Response Rates, Intersectional Results by Trans/Cisgender Status and Race/Ethnicity**

| | (1) | (2) |
|---|---|---|
| Transgender or non-binary | 0.0260 | … |
| | (0.0405) | |
| …and White | … | 0.1196** |
| | | (0.0526) |
| …and African American | … | -0.1337** |
| | | (0.0546) |
| …and Hispanic | … | -0.0430 |
| | | (0.0604) |
| Cisgender | | |
| …and African American | … | 0.0008 |
| | | (0.0572) |
| …and Hispanic | … | -0.0243 |
| | | (0.0625) |
| All African American | -0.1302*** | … |
| | (0.0364) | |
| All Hispanic | -0.1072** | … |
| | (0.0481) | |
| N | 1,000 | 1,000 |
| Adjusted $R^2$ | 0.0421 | 0.0447 |

*Notes:* See the notes to Table 6. Standard errors, clustered at the patient level, in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

**Table 8: Differences in Positive Response Rates, Intersectional Results by Gender Identity and Race/Ethnicity**

| | (1) |
|---|---|
| Transgender women | |
| …and White | 0.1365* |
| | (0.0789) |
| …and African American | -0.0905 |
| | (0.0872) |
| …and Hispanic | -0.3603*** |
| | (0.0806) |
| Transgender men | |
| …and White | 0.1765 |
| | (0.1117) |
| …and African American | -0.1389 |
| | (0.1058) |
| …and Hispanic | -0.0326 |
| | (0.0983) |
| Non-binary | |
| …and White | 0.0198 |
| | (0.0768) |
| …and African American | -0.3966*** |
| | (0.1230) |
| …and Hispanic | -0.0224 |
| | (0.0656) |
| Cisgender women | |
| …and White | 0.0995 |
| | (0.0921) |
| …and African American | -0.1312 |
| | (0.1086) |
| …and Hispanic | -0.0674 |
| | (0.1205) |
| Cisgender men | |
| …and African American | 0.0976 |
| | (0.0770) |
| …and Hispanic | 0.0063 |
| | (0.0829) |
| N | 1,000 |
| Adjusted $R^2$ | 0.0447 |

*Notes:* See the notes to Table 6. The coefficient for cisgender African American men (cisgender White women) is statistically significantly different from the coefficient for cisgender African American women with a p-value of 0.0288 (0.094). Standard errors, clustered at the patient level, in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.