

How Does the COVID-19 Crisis Affect Access to Mental Health Care? Evidence from an Audit Field Experiment

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Introduction: MHPs and the pandemic

The COVID-19 pandemic has increased mental health issues such as depression (Torales et al. 2020; Pfefferbaum and North 2020).

Support from mental health practitioners (MHPs) helps coping with these increased issues.

However, MHPs might not be able to keep up with the increased demand (e.g. the supply is relatively inelastic over a short period of time, they could have mental illness too or have take care of a sick family member, etc...).

It is important to understand if the US mental health care system can adapt to the increased demand following a public health crisis.

Introduction: MHPs, pandemic, and minority groups

Minorities already face mental health disparities and are more negatively impacted by COVID-19 (Montenovo et al. 2020).

It is natural to wonder whether a scarcity of MHPs appointments could add to the existing gaps by reducing access to MHPs.

We are not aware of any work on how scarcity in health care affects discrimination in access.

Aside the MHPs market, only a few studies investigate how scarcity might affect discrimination in the labor market: some studies find that scarcity increases discrimination (Baert et al. 2015; Kroft et al. 2013) while other studies find no effect (Carlsson et al. 2018).

Introduction: Research Questions

So, we contribute to the literature by answering two research questions:

1. How does a public health crisis affect access to MHPs appointments?
2. How does a public health crisis interacts with patients' race, ethnicity, and gender identity to affect access to MHPs' appointments?

We investigate these two research questions with a combination of observational and experimental data.

We combine data from this (unfortunate) natural experiment given by the COVID-19 pandemic with data from a large-scale field experiment currently ongoing (Button et al. 2020).

Introduction: Preliminary Results

Preliminary Results:

1. COVID-19 intensity decreases access to MHPs' appointments.
2. Discrimination based on race, ethnicity, and gender identity tend to decrease with the increase in COVID-19 intensity.

The Roadmap

- COVID-19 Data
- Experiment Design
- Descriptive Statistics
- Results
- Caveats and Next Steps

COVID-19 Data: Why COVID-19 Data

Why do we use COVID-19 data?

We used them as proxies for the increased demand of MHPs appointments.

The idea is that COVID-19 intensity has a negative impact on the population mental health and thus is expected to increase demands of MHPs' appointments (e.g. worries for family's and friends' health; the adoption of policies to limit the spread negatively affect social contacts, job security, and the probability to be evicted).

COVID-19 Data: Data Source

We collect information on COVID-19 intensity, as measured by number of infected people and deaths, from the online and freely accessible repository managed by the New York Times.

(<https://github.com/nytimes/covid-19-data>)

These data are available at national, state, and county level. We use data on state level; we cannot use data at the county level because we do not have enough “within variation” at county level in our experiment.

Experiment Design: Correspondence Test

Since the end of January 2020, we have been auditing the behavior of MHPs in response to fictitious prospective patients who email requesting appointments.

We email MHPs pretending to be potential patients looking for an appointment.

We experimentally vary patient demographic characteristics (race, ethnicity, and gender identity) and examine to what extent therapists responses differ across these characteristics.

If providers significantly under-respond to a group relative to the reference one, we have evidence of discrimination against that group.

Experiment Design: Fictitious Patient Profiles

First, we construct the profiles of 100 fictitious patients to contact selected MHPs.

Each patient contacts 10 MHPs (so N=1,000)

Fictitious patients are randomly-constructed:

- $\frac{1}{2}$ of patients are transgender or non-binary (TNB) and $\frac{1}{2}$ are cisgender
- $\frac{1}{2}$ are African-American or Hispanic (evenly split) and $\frac{1}{2}$ are white
- $\frac{1}{2}$ of cisgender patients and $\frac{1}{2}$ of TNB patients are female

Experiment Design: Signaling Demographic Characteristics

We signal race, ethnicity, and gender with names following Bertrand and Mullainathan (2003), Barlow and Lahey (2018), and Gaddis (2017).

What about gender identity?

To signal transgender identity we use the following phrases: “I am a transgender woman” or “I am transgender man.” To signal non-binary identity, a client will reveal they are non-binary (i.e. “I am non-binary”). All of them add “...and I am looking for a trans-friendly therapist”

This way to disclose gender identity is natural, and represents a recommended practice for TNB individuals seeking mental health care services (Kassel, 2018).

Experiment Design: Email Structure

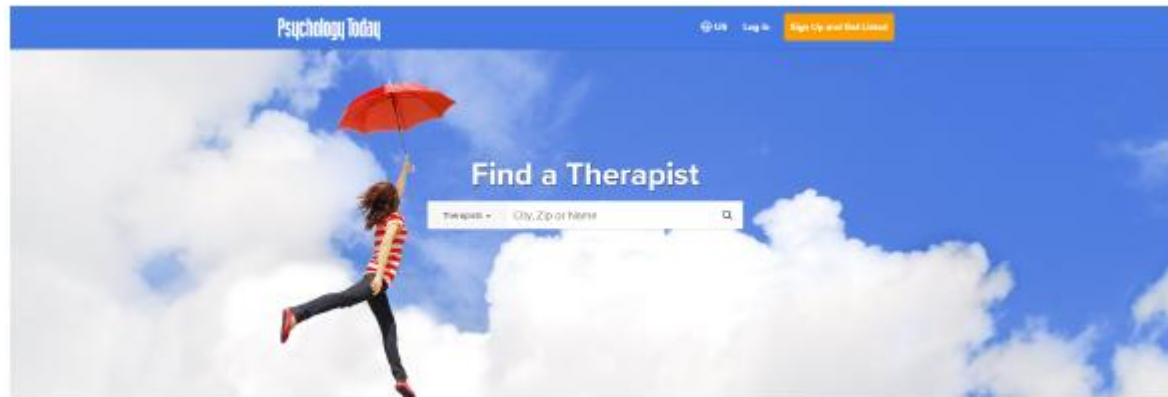
Figure 1: Structure of the Emails to MHPs

1.) [EMAIL SUBJECT LINE] *Legend: (): denotes motivating verbiage, not exact phrasing*
 Hi./Hello, []: denotes randomized input
 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]

Figure 2: Randomized Components of the Emails to MHPs

<p>1) [EMAIL SUBJECT LINE]</p> <ul style="list-style-type: none"> -Seeking therapy -Looking for a therapist - Therapy inquiry 	<p>2) [NAME]</p> <p><i>Afr: -Am. Hispanic White</i></p> <p><i>Male-Coded First Names</i></p> <table border="0"> <tr> <td>Darius</td> <td>Alejandro</td> <td>Brian</td> </tr> <tr> <td>DeShawn</td> <td>Luis</td> <td>Kevin</td> </tr> </table> <p><i>Female-Coded First Names</i></p> <table border="0"> <tr> <td>Ebony</td> <td>Mariana</td> <td>Amanda</td> </tr> <tr> <td>Lakeisha</td> <td>Valentina</td> <td>Heather</td> </tr> </table> <p><i>Last Names</i></p> <table border="0"> <tr> <td>Washington</td> <td>Hernandez</td> <td>Anderson</td> </tr> <tr> <td>Jefferson</td> <td>Garcia</td> <td>Thompson</td> </tr> </table>	Darius	Alejandro	Brian	DeShawn	Luis	Kevin	Ebony	Mariana	Amanda	Lakeisha	Valentina	Heather	Washington	Hernandez	Anderson	Jefferson	Garcia	Thompson
Darius	Alejandro	Brian																	
DeShawn	Luis	Kevin																	
Ebony	Mariana	Amanda																	
Lakeisha	Valentina	Heather																	
Washington	Hernandez	Anderson																	
Jefferson	Garcia	Thompson																	
<p>3) [MENTAL HEALTH CONCERN]</p> <ul style="list-style-type: none"> -I've been feeling anxious lately. -I've been feeling stressed all the time. -I think I might be depressed. 																			
<p>4) [GENDER IDENTITY]</p> <ul style="list-style-type: none"> -a transgender woman -a transgender man -non-binary 																			
<p>5) [APPOINTMENT REQUEST]</p> <ul style="list-style-type: none"> -Can we set up an appointment? -When could I see you? 																			
<p>6) [VALEDICTION]</p> <ul style="list-style-type: none"> -Sincerely, -Thanks, -Best, -[None] 																			

Experiment Design: Sampling MHPs



We sample 1,000 MHPs from Psychology Today's "Find a Therapist" database.

Hosts over 250,000 MHPs around the US (the largest online database of its kind).

Experiment Design: MHP Selection

First, we create a database of ZIP codes, where we will search for MHPs, so that we will obtain a nationally representative sample of MHPs.

Second, we input each zip code in the “Find a Therapist” search bar and select MHPs according to two main criteria:

1. they treat common mental health concerns, namely stress, anxiety, and depression
2. they do not work only with specific demographic groups outside of the scope of this experiment (e.g. children or adolescents).

Descriptive Statistics: Coding MHP Responses

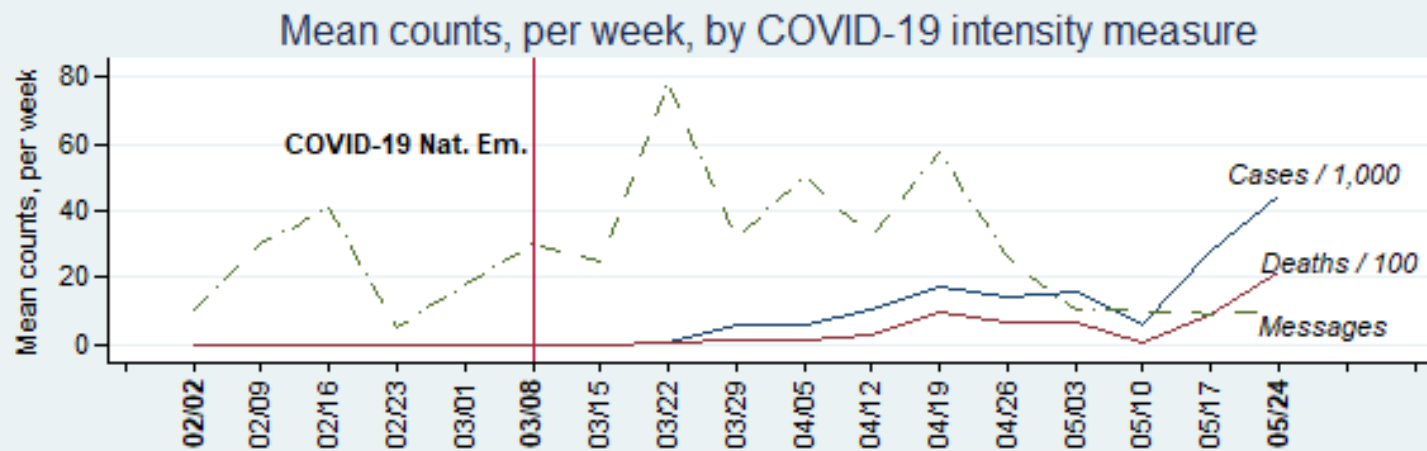
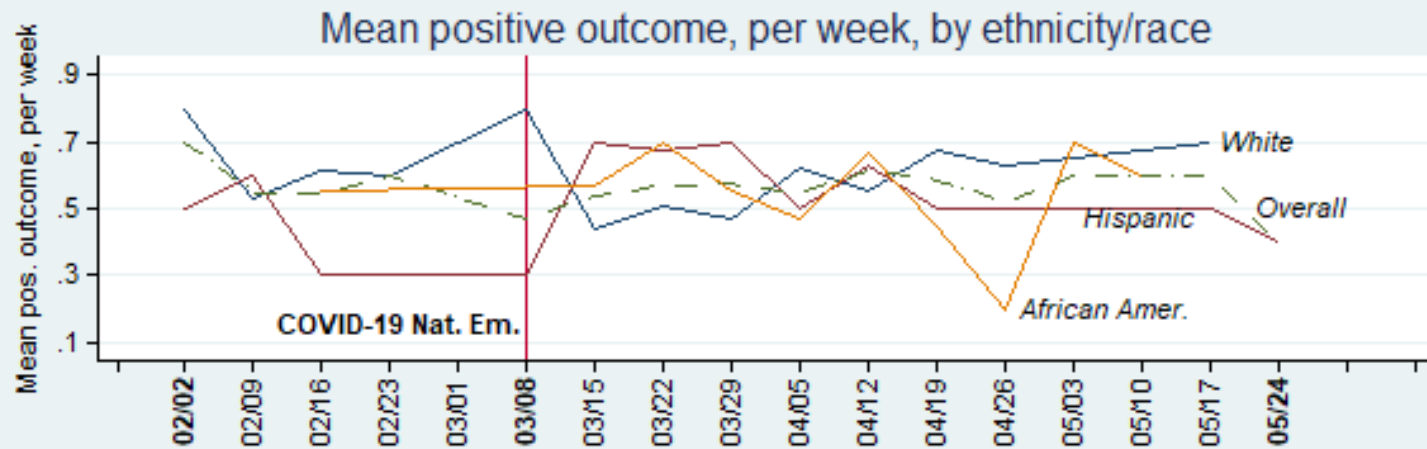
Specific Outcomes		
Appointment	333	33.3%
Call/Consultation	233	23.3%
Screening	60	6.0%
Waitlist	21	2.1%
Referral	48	4.8%
Rejection	60	6.0%
No Response	245	24.5%
Total	1000	100.0%

Our primary outcome variable, i.e. Positive Outcome, is a binary variable equal to 1 for appointment or call/consultation offer, 0 otherwise (Kugelmass, 2018).

Descriptive Statistics: Positive Outcome by Demographic Group

Positive Outcome by Race, Ethnicity, and Gender Identity	
White	58.0%
Hispanic	54.8%
African American	55.6%
Cisgender	60.6%
Transgender or Nonbinary	52.9%

Descriptive Statistics: Positive Outcome and COVID-19 intensity



Results: COVID-19

$$\begin{aligned} PosOutcome_{ist} = & \beta_0 + \beta_1 COVID_{st} + \beta_2 TransorNonBinary_i + \\ & \beta_3 AfricanAmerican_i + \beta_4 Hispanic_i \\ & + HealthConcern_i \beta_5 + \delta_s + \theta_t + \varepsilon_i \end{aligned}$$

We estimate a linear probability model of the above specification.

We standardize COVID-19 infected # (mean=5,964, std=11,122) and deaths # (mean=225, std=489)

Results: COVID-19 and Minority Groups

$$\begin{aligned} PosOutcome_{ist} = & \beta_0 + \beta_1 COVID_{st} + \beta_2 TransorNonBinary_i + \\ & \beta_3 AfricanAmerican_i + \beta_4 Hispanic_i + \beta_5 COVID_{st} * TransorNonBinary_i + \\ & \beta_6 COVID_{st} * AfricanAmerican_i + \beta_7 COVID_{st} * Hispanic_i \\ & + HealthConcern_i \beta_8 + \delta_s + \theta_t + \varepsilon_i \end{aligned}$$

With this second model specification we study how the effect of COVID-19 intensity on the probability of receiving a positive response varies by gender identity, ethnicity, and race.

Results: Regression Results

	(1)	(2)	(3)	(4)
Transgender or Nonbinary	-0.007	-0.006	0.009	0.016
	(0.046)	(0.046)	(0.044)	(0.043)
African American	-0.130***	-0.123***	-0.132***	-0.121***
	(0.040)	(0.040)	(0.042)	(0.044)
Hispanic	-0.103*	-0.086	-0.123**	-0.097
	(0.057)	(0.062)	(0.058)	(0.063)
Std Infections	-0.044	-0.145**		
	(0.028)	(0.060)		
Transgender or Nonbinary*Std Infections		0.020		
		(0.046)		
African American*Std Infections		0.127**		
		(0.049)		
Hispanic*Std Infections		0.109*		
		(0.064)		
Std Deaths			-0.013	-0.165**
		...	(0.035)	(0.082)
Transgender or Nonbinary*Std Deaths				0.076*
				(0.040)
African American*Std Deaths				0.142**
				(0.068)
Hispanic*Std Deaths				0.087
				(0.087)
N	1,000	1,000	1,000	1,000
Adjusted R²	0.037	0.038	0.036	0.037
Std Infections #	11,122			
Std Deaths #	489			

Note: All regressions include controls for mental health concern (depression, anxiety, stress), state fixed effects, day of the week sent fixed effects, and week sent fixed effects. Standard errors, clustered at the patient level, in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Caveats and Next Steps

These analyses do not take into account

- MHP characteristics,
- The impact of shelter-in-place ordinances (SIPOs).

However, future analyses will take care of both issues:

- MHPs characteristics will be collected from Psy Today,
- Detailed and up-to-date SIPOs information will be collected from Fullman et al. (2020)
(<https://github.com/COVID19StatePolicy/SocialDistancing>)

Moreover, the sample size is currently in expansion: data collection will proceed through 2021.

Thank you!

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Appendix 1: Sample Email

- A selected MHP will receive an email that looks something like this

Looking for a Therapist  Inbox x



Hi,



My name is DeShawn Jefferson.

I'm contacting you because I've been feeling anxious lately and I want to talk to a therapist. I am a transgender man and am looking for a therapist who is trans-friendly. Can we set up an appointment?

Best,
DeShawn Jefferson

 Reply

 Forward

Appendix 2: Patient Profiles Distributions

These are the distributions of the 100 fictitious patients by gender, gender identity, race, and ethnicity:

<u>Distribution of Gender Identity</u>			
Cisgender	Male	31	48
	Female	17	
Trans*	Male	14	31
	Female	17	
	Nonbinary	21	21
		n=100	

<u>Distribution of Race/Ethnicity</u>			
White	Male	18	50
	Female	20	
	Nonbinary	12	
Black	Male	15	27
	Female	10	
	Nonbinary	2	
Hispanic	Male	12	23
	Female	4	
	Nonbinary	7	
		n=100	


Appendix 3: MHPs Profile on Psy Today

Psychology Today

Therapists ▾ City, Zip or Name

US Log In Sign Up and Get Listed

< Back To Results Previous Next



Bruce N Eimer

Psychologist, PhD, ABPP

(215) 392-6308

Verified by Psychology Today

About Groups

Email Me

Send to Friend

Website

I can help you change self-defeating habits that have resisted your conscious efforts to change; behaviors like overeating, smoking, negative thinking, avoiding, getting anxious, depressed, and losing your cool. Habits are controlled by your subconscious. So, you need a reliable method of communicating with it. I use clinical hypnosis to open the doorway to your subconscious so that with your permission I can provide it with the information it needs to change the behaviors you want to change. I take the time to listen and understand you. Working together, we will create an individualized hypnosis program that will work for you.

I've been practicing Hypnotherapy and Cognitive-Behavioral Therapy for over 30 years. I'm a Fellow of the American Society of Clinical Hypnosis and American Psychological Association. As is appropriate, I'll work with your physician, psychologist or dentist to give you coordinated and effective care. I offer office and online video hypnotherapy sessions.

I have practiced as a licensed psychologist in Pennsylvania since 1986 and I'm board certified by the American Board of Professional Psychology. I recently moved to South Florida where I'm practicing as a consulting hypnotist and hypnotherapist. I train therapists in the use of hypnosis, conduct seminars, and I've written a number of books on hypnotherapy.

Location

Bruce N. Eimer, Ph.D.
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Email Me Nearby Areas

Specialties

- Anxiety
- Depression
- Addiction

Issues

- Anger Management
- Behavioral Issues
- Bipolar Disorder
- Chronic Pain
- Grief
- Hoarding
- Men's Issues
- Self Esteem
- Sleep or Insomnia
- Sports Performance
- Stress
- Substance Abuse
- Suicidal Ideation
- Trauma and PTSD
- Weight Loss

Client Focus

Age

Appendix 4: Differences in Responses by Gender Identity

		Cisgender	Trans or Nonbinary	Total
Call or Appt. Offered?	No	189	245	434
		39.4%	47.2%	
	Yes	291	275	566
		60.6%	52.8%	
Total	480	520	1000	

- TNB patients received appointments and consultation calls at lower rates (52.8%) compared to (60.6%) cisgender patients ($p=0.013$).
 - Two-sided t-test.

Appendix 5: Differences in Responses by Race/Ethnicity

		White	African-American	Hispanic	Total
Call or Appt. Offered?	No	210	120	104	434
		42.0%	45.5%	45.2%	
	Yes	290	150	126	566
		58.0%	55.5%	54.8%	
	Total	500	270	230	1000

Non-significant differences in response rate by race/ethnicity ($p=0.51$ for W vs. AA and $p=0.42$ for W vs H; $p=0.86$ for AA vs H)

Appendix 6: Correlations

Correlations between Positive Outcome per demographic group, infected # and deaths #		
	Infected #	Deaths #
White	0.008	0.047
Hispanic	0.128*	0.100
African American	-0.160**	-0.184**
Cisgender	-0.008	-0.001
Transgender	-0.017	-0.031