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Improving Contact Tracing in Minority Communities by Combating Misinformation and Distrust

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In April 2020, the University at Albany was asked by Gov. Andrew Cuomo to research why communities of color in New York have been disproportionately impacted by COVID-19. The goal of this research, carried out in partnership with the New York State Department of Health and Northwell Health, is to add to the existing well of knowledge about health disparities in New York State by identifying the environmental, socioeconomic and occupational factors that explain why COVID-19 has disproportionately harmed Black and Hispanic New Yorkers and to propose practical intervention strategies to eliminate these disparities and save lives.

For additional information about this project please see: www.albany.edu/mhd or contact Theresa Pardo, Special Assistant to the President and Project Director for this initiative at tpardo@ctg.albany.edu.

**Improving Contact Tracing in Minority Communities by Combating Misinformation and
Distrust**

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White paper prepared as part of a series addressing:

***Differential Impacts of COVID-19 in New York State: Understanding and eliminating
minority health disparities in a 21st-century pandemic***

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Abstract

The COVID-19 pandemic continues to challenge the global population as infection rates climb, and officials struggle to balance the needs to slow the spread of COVID-19 but also open economies safely. The disproportionate impact of COVID-19 on minority communities has raised questions about the unique experiences of these communities in terms of not only becoming infected with COVID-19, but also mitigating its spread. Although contact tracing has been identified as an invaluable tool for managing community spread and supporting economic reopening, this is contingent, in part, upon compliance with contact tracer requests. In this study, we investigated how misinformation and distrust might influence intentions to comply with contact tracer requests among a sample of self-identified minority New Yorkers. Results showed that intentions to comply with contact tracing requests was directly related to knowledge about contact tracing, trust in contact tracers, trust in healthcare professionals, and self-identified political liberalism. Results also showed that increased intentions to comply with contact tracers was indirectly influenced by trust in healthcare professionals, trust in government healthcare officials, and trust in news media via increased trust in contact tracers, and health literacy and political liberalism through increased knowledge of contact tracing. These findings inform four policy recommendations for improving contact tracing compliance among minority individuals by combating misinformation and distrust.

Improving Contact Tracing in Minority Communities by Combating Misinformation and Distrust

The COVID-19 global pandemic has introduced extraordinary challenges for the New York State government and the public health response. With the largest spike in cases and ensuing deaths in the state in late March through early May (2020), New York public health officials and healthcare providers were hit fast and hard in the United States' battle with the COVID-19 coronavirus (New York Times, 2020). Unfortunately, it became evident early on that the virus disproportionately harmed people of color, particularly African American and, to a lesser extent, Latinx populations, exacerbating pre-existing minority health disparities (e.g., Hooper et al., 2020; Selden & Berdahl, 2020). Similarly, the economic and educational impacts of COVID-19 have also disproportionately harmed minority communities (e.g., Hooper et al., 2020; Yancy, 2020); members of these communities are more likely to be essential workers (Blau et al., 2020). Hooper and colleagues (2020) summarize two key reasons why the burdens associated with COVID-19 may impact racial/ethnic minority communities more than White majorities. First, underlying health comorbidities that increase risk of harm from COVID-19 and other respiratory diseases, are disproportionately prevalent in minority groups. Second, racial/ethnic minorities are overrepresented in poor, urban, more crowded areas where the virus may spread more quickly, and are more likely to work in occupations that require face-to-face interaction (e.g., healthcare, grocery retail), thus putting them at risk for more exposure (Blau et al., 2020; Selden & Berdahl, 2020; Yancy, 2020). Therefore, the governments' response to the public health crisis must include efforts to ensure equity in the tools we use to mitigate the spread of COVID-19—that our efforts are successful for all New Yorkers, not just members of majority groups.

In this white paper, we focus on contact tracing as a tool to mitigate the spread of COVID-19 and present data from a sample of New York residents from minority racial/ethnic groups detailing the extent to which disinformation and distrust may interfere with contact tracing compliance. Based on our findings, we provide a number of recommendations to improve compliance with contact tracing requests in minority communities, and elsewhere, to mitigate minority health disparities as they relate to COVID-19 and future public health crises.

Contact Tracing: An Essential Tool to Stop the Spread of COVID-19

COVID-19 spreads across individuals when liquid virus particles enter an individual's body. As such, someone becomes infected with COVID-19 when a sufficient amount of virus particles enter their body through their mouth, eyes, or nose; a situation that is more likely the physically closer two individuals are to each other, and/or when in an enclosed area for a prolonged period of time (World Health Organization, 2020). This method of transmission has prompted public health officials to encourage wearing facemasks and socially/physically distancing from others. As noted above, one explanation for the disproportionate impact of COVID-19 on minority communities is the overrepresentation of these individuals in living and working situations that precludes distancing from others.

Another essential tool to help slow the spread of COVID-19, especially among those for whom distancing is not possible, is contact tracing. Contact tracing is the process by which public health officials talk to individuals who have been infected with COVID-19, and collect information about other individuals with whom the infected individual has been in close proximity. With this information, contact tracers can inform these individuals that they have been near someone with COVID-19, and then provide guidance on testing, isolation, and medical care follow-up.

The spread of COVID-19 is slowed the most with a combination of expeditious testing and contact tracing compliance (Kretzschmar et al., 2020). As such, factors that impact the efficacy of contact tracing are (1) the time that passes between an infected individual showing symptoms and being tested (i.e., testing delay), (2) delays in the time between testing positive and contact tracing beginning (i.e., tracing delay), (3) compliance with contact tracing requests (i.e., tracing compliance), and (4) the proportion of contacts identified and tested (i.e., tracing coverage) wherein 100% means all contacts are identified, spoken with, and tested/isolated therein stopping the spread along that transmission vector (Kretzschmar et al., 2020).

Whereas testing delay and tracing delay are factors that are impacted more by the system/procedures in place for testing and tracing, tracing compliance and tracing coverage are factors affected more by the behaviors of COVID-19 infected persons. Indeed, contact tracing will only be successful if infected persons follow the instructions of the contact tracer and if they communicate effectively and openly with contact tracers by sharing accurate and complete information of those with whom they have been in contact. Obtaining this trust and compliance with contact tracers is not only difficult in general (Mooney, 2020), but especially difficult in minority communities given, as discussed next, numerous factors that may impact tracing compliance.

Resistance to Contact Tracing in Minority Communities

Knowing that individuals in minority communities are (1) less able to socially distance because of living arrangements and (2) their higher rates of essential work (Hooper et al., 2020; Yancy, 2020), contact tracing may be the most viable approach to mitigating the spread of COVID-19 in minority communities. Systemic mistreatment of minority individuals, however, may hinder compliance with contact tracer requests. In particular, we highlight five factors that

likely affect minority individuals' willingness to share information with contact tracers and/or their capacity to comply with contact tracing: (1) Distrust in healthcare providers/systems; (2) Distrust in government officials; (3) Distrust in contact tracers; (4) Misinformation or lack of knowledge; and (5) Financial insecurity and strain.

Distrust in Healthcare Systems. Myriad factors have influenced minority individuals' distrust in healthcare systems from as early as how slave owners addressed medical needs of their slaves, to present-day disparities in healthcare access (Kennedy et al., 2007). One of the most infamous cases of minority mistreatment is the Tuskegee Syphilis studies in which 400 Black men in Alabama, infected with syphilis, were purposely not treated with effective therapeutics so that medical researchers could learn the course of the disease (Gamble, 1993; 1997; Kennedy et al., 2007). These historical factors permeate the healthcare landscape for minority individuals today including a lack of minority healthcare providers, poor patient-physician relationship, a lack of cultural competence among healthcare providers, and limited access to care resulting from availability of healthcare providers and/or cost of healthcare (Kennedy et al., 2007). Taken together, minority individuals are less likely to trust healthcare systems (e.g., Halbert et al., 2006; Whetten et al., 2006). To the extent that contact tracers are seen as representatives of the healthcare system, minority individuals may not trust the motives and/or intentions of these individuals reducing compliance (Whetten et al., 2006).

Distrust in Government Officials. Beyond trust in healthcare systems, minority individuals tend to distrust the government and government officials (Marschall & Shah, 2007; Marschall & Stolle, 2004). This lack of trust has been linked to neighborhood factors (Marschall & Stolle, 2004), increased legal cynicism among minority individuals (Nivette et al., 2015), and even lower beliefs in a just world (Hunt, 2000). Furthermore, distrust in the government is

associated with reduced use of healthcare services (Whetten et al., 2006). To the extent that contact tracers are viewed as government officials, minority individuals may trust them less and therein be less likely to comply with their requests.

Distrust in Contact Tracers. As noted above, if one sees contact tracers as representatives of healthcare and/or government, (dis)trusting these institutions may mean (dis)trusting contact tracers. An additional consideration, though, is the extent to which an individual directly trusts contact tracers as an institution. Indeed, compliance with contact tracing requests will vary as a function to which one trusts the intents and motives of contact tracers as representatives of the contact tracing institution. Conceptualizations of trust highlight cognitive, affective, and dispositional components that impact whether or not one will trust an institution (e.g., contact tracing efforts) and therein an agent of that institution (i.e., a contact tracer).

Typically, trust develops over time as two parties learn about each others' intentions and behavioral patterns (McAllister, 1995). Such a series of interactions, however, is nonexistent in the context of one party trusting another party in a nonrepeating, short duration interaction, such as when a COVID-19 infected person has to decide whether or not to trust a contact tracer—this has been referred to as swift trust in the organizational sciences (e.g., Schilke & Huang, 2018). Swift trust refers to a willingness to be vulnerable to the actions of another that develops rapidly, and develops prior to any significant exchange relationship between the two parties (Schilke & Huang, 2018). One key determinant of swift trust is accurate knowledge about the motives and goals of an institution (Lewis & Weigert, 1985; Nunkoo et al., 2018). It stands to reason, then, that swift trust is dependent upon, in part, knowledge about the institution an individual represents (i.e., contact tracers representing the contact tracing institution). As such, knowledge

of contact tracing should be related to trusting contact tracers, and trusting contact tracers should be related to intentions to comply with contact tracing requests.

Misinformation. Misinformation about contact tracing and COVID-19, more broadly, has spread rapidly across social media and the internet (Gregory & McDonald, 2020; Shmerling, 2020), prompting the WHO to publish a COVID-19 “Mythbusters” page to stop the spread of misinformation (WHO, n.d.). Such misinformation may be problematic if it impedes the important work of contact tracing and interferes with individuals’ willingness to comply with contact tracing requests. Unfortunately, minority racial and ethnic groups are often targets for misinformation, due in part to lower average levels of scientific literacy (Allum et al. 2018) and health literacy (Berkman et al., 2011), as well as attempts to exploit the distrust and mistreatment among minority communities for healthcare and the government alluded to previously (e.g., Schumaker, 2019). Therefore, misinformation concerning contact tracing may hinder contact tracing compliance, particularly in minority communities. Although misinformation about contact tracing may come from a variety of sources, in this study we focus on three: (1) low health literacy, (2) low trust in the news media, and (3) political partisanship.

First, health literacy is defined as “the degree to which an individual has the capacity to obtain, communicate, process, and understand basic health information and services to make appropriate health decisions” (Center for Disease Control and Prevention [CDC], 2020). Health literacy is a powerful determinant of health outcomes and is a critical determinant of minority health disparities in healthcare access and making health-related decisions (Berkman et al., 2011). Individuals’ general knowledge in a given domain, such as health, is tied to their past experiences (in this case with health-related issues and services) and their typical intellectual engagement in the domain (e.g., seeking out health-related news; Ackerman & Beier, 2004;

Beier et al., 2017). As noted above, distrust in healthcare is pervasive in minority communities in part because of negative experiences minority individuals experience with healthcare providers (Kennedy et al., 2007). Nevertheless, we expect that health literacy may provide an important foundation of basic health information and services with which to combat the spread of misinformation related to COVID-19 in minority communities and to increase the likelihood of complying with contact tracing requests.

Second, given the importance of obtaining and understanding basic health information and services, it is worth investigating where individuals from minority groups obtain their information related to COVID-19, and the extent to which they trust the news media to present accurate, verifiable, consistent, clear, and balanced information (Clayman et al., 2010; Gollwitzer et al., 2020). We propose, therefore, that minority individuals who trust new media are more likely to encounter accurate information about contact tracing and therein have more knowledge of contact tracing. This increased knowledge of contact tracing should lead to more intentions to comply with contact tracing requests. Thus, we also investigate minority individuals' trust in news media (Gollwitzer et al., 2020) as an antecedent of contact tracing knowledge and subsequent willingness to comply with tracing requests.

Third, given the polarized nature of American politics in an election year, there are well-documented partisan differences in the perceived threat of the COVID-19 virus and the way individuals and the government ought to respond (e.g., Gollwitzer et al., 2020; Pew Research Center, 2020). In general, conservatives view COVID-19 as less threatening and are more resistant to efforts that would otherwise mitigate spread (e.g., physical distancing, mask wearing, government restrictions on business operation), and in fact political partisanship is a much stronger predictor of these response behaviors than other grouping variables such as race, gender,

age, or geography (Gollwitzer et al., 2020; Pew Research Center, 2020). Why would this be the case? Individuals' ideological beliefs and political partisanship can motivate their behavior and shape their beliefs (Leeper & Slothuus, 2014; Peterson et al., 2013; Van Bavel & Pereira, 2018), so in the context of the pandemic, this may contribute to conservatives diminishing the seriousness of the threat caused by COVID-19 and seeking less information on strategies to mitigate its spread, such as contact tracing (Bavel et al., 2020; Conway et al., 2020; c.f., Pennycook et al., 2020). Stated differently, conservative individuals are unlikely to seek out or believe valid information related to COVID-19 and/or contact tracing; as a result, they will have less knowledge of contact tracing and therein will be less likely to comply with contact tracing requests. Subsequently, we also investigate political partisanship as a predictor of individuals' contact tracing knowledge and their willingness to comply with contact tracers.

Financial Insecurity/Strain. Finally, financial considerations may limit compliance with contact tracing requests. After exposure to COVID-19, individuals will need to isolate themselves until they test negative for COVID-19. Minority individuals are disproportionately represented in low-wage essential work (Bureau of Labor Statistics, 2019), and given the high unemployment rate due to COVID-19 (Gould & Johnson, 2020), minority individuals may elect to continue working so as to continue earning money, and not lose their job. Indeed, Mooney (2020) notes that previous successful contact tracing campaigns were facilitated by the government providing compensation to those requiring isolation. To the extent that individuals are experiencing or fear experiencing financial strain, financial insecurity, and/or job insecurity, contact tracing compliance will be reduced.

Taken together, these categories represent several broad motivational mechanisms that could drive contact tracer noncompliance among minority individuals. In order to mitigate the

disproportionate impact of COVID-19 on minority individuals, contact tracing compliance and coverage will need to be maximized. As described next, this research aims to explore the extent to which these mechanisms are related to contact tracer compliance among minority groups.

Overview of the Research Project Aims

In order to investigate the influence of the aforementioned mechanisms of distrust and misinformation impacting intentions to comply with contact tracers, we sent a survey to a sample of racial/ethnic minority adults who live in New York State. The goals of this study were to 1) identify whether and how these mechanisms are related to minorities' self-reported intentions to comply with contact tracers, and 2) provide recommendations for policy that help increase minorities' willingness to comply with contact tracers.

Study Method

Participants and Procedures. Participants were recruited through Prolific, an online participant management data collection site. Self-reported racial/ethnic minority status individuals who lived in New York State were targeted for our study. Participants completed an online survey which took approximately 30 minutes. Participants were paid, \$4.75 for completing survey. A total of 413 individuals participate in the online survey, however 60 people were dropped for not passing the attention checks or properly filling out the survey. A final sample size of 353 individuals was used for data analyses (see Table 1 for demographics).

Measures. In total, the survey contained 11 measures. Unless otherwise noted, responses were made on a five point agreement scale.

Financial Insecurity. Financial insecurity was measured using Lantz, House, Mero, and Williams's (2005) Financial Chronic Stress Scale. This scale measures respondents' perceptions

of their financial needs being met. A sample item is, “How satisfied are you with your/your family’s present financial situation?” (five point *satisfied to not at all satisfied* scale).

Job Insecurity. Job insecurity is a respondent’s belief in the stability of their employment. This construct was measured using Hellgren, Sverke, & Isaksson’s (1999) seven-item scale. A sample item is “I am worried about having to leave my job before I would like to.”

Health Literacy. Health literacy measures a respondent’s comfort and skill with understanding healthcare information. We measured this construct using Chinn and McCarthy’s (2013) ten item measure, and assesses the respondents’ comfort with healthcare information (“When you need help, can you easily get hold of someone to assist you?”).

Belief in COVID-19. To measure belief in COVID-19, a respondent’s opinion about the seriousness and handling of COVID-19, we created a five-item measuring asking about different beliefs related to COVID-19 (“Do you believe COVID-19 is a hoax?”)—respondents indicated yes or no to these items.

Intentions to Comply with Contact Tracing. To measure intentions to comply with contact tracing requests, we created a four-item measure asking respondents how likely they were to respond to a contact tracer’s requests (“If a contact tracer contacted you how likely would you be to give all asked information?”)—responses were on a five point likelihood scale.

Misinformation about Contact Tracers. We define misinformation as a lack of knowledge or facts about contact tracing, including endorsements of untruths or myths on the topic. In order to assess misinformation, we constructed a 20-item knowledge of contact tracing test. To write the items, we reviewed materials provided by the CDC, New York’s Health Department, and other reliable sources (e.g., Johns Hopkins Coursera training for contact tracing; Gurley, 2020). Questions represented basic facts and information about the key tasks a contact

tracer performs, the types of information they gather, individuals' rights and responsibilities when responding to tracing requests, and the efficacy of contact tracing in the fight against COVID-19 (see Appendix A for a full list of questions and answers).

Distrust in Contact Tracers, Healthcare Providers, and Government Health Officials.

We define distrust as the belief that another party lacks reliability, competence, or concern about one's own interests (McAllister, 1995; Spreitzer & Mishra, 1999). This distrust, or lack of confidence in another party, can be aimed at a specific target such as a particular person (e.g., a specific contact tracer), group (e.g., contact tracers), or organization, (e.g., department of health), or may be more diffusely aimed at individuals who fill particular roles (e.g., healthcare professionals) or groups more generally (e.g., the government). As noted above, we are interested in understanding the roles of distrust in myriad targets on contact tracer compliance. This includes (1) contact tracers, (2) healthcare providers, (3) government health officials, and (4) the news media. To contact tracers, healthcare providers, and government health officials, we used the same 16-item measure of trust (see Spreitzer & Mishra, 1999), but referent-shifted the items to refer to the different targets (e.g., "I trust that [Contact Tracers/Healthcare Providers/Government Health Officials] are completely honest with me"). Trust in news media was measured using Kohring & Matthes's (2007) trust in news media scale. This 16-item measure asks respondents their beliefs about news media's coverage of a specific topic—in this case "Corona virus" (e.g., "The frequency with which Corona Virus is covered is adequate"). All responses were made on a 1 to 5 agreement scale.

Personality-Based Trust. To measure personality-based trust, we used the 19-item International Personality Item Pool trust scale (Goldberg et al., 2006). Item were rated on five point agreement scale. An example item is "I trust others."

Liberalism-Conservatism. To measure respondents' liberal versus conservative political viewpoints, we presented respondents with a single-item asking them "How liberal versus Conservative would you characterize yourself?" A seven point response scale was used with one end anchored "far left liberal" and the other "far right conservative"—lower values indicated more liberal beliefs.

Open-Ended Questions. To gauge respondents' thinking about contact tracing, we asked respondents five open-ended questions about contact tracing. 1) Who are contact tracers; 2) Can contact tracers get you in trouble for not following public health guidelines? If so, how?; 3) Under what circumstances would you respond to a request for contact tracing?; 4) What would make it more likely that you would follow a contact tracer's guidance?; 5) What do you think contact tracers can do or say to make it more likely that you would trust and listen to them?

Demographics. Finally, respondents were asked a series of demographic questions including aspect of health insurance coverage, exposure to COVID-19, and experience with contact tracing.

Study Results

Sample Characteristics and Variable Descriptives

The first analyses conducted are descriptive statistics that help detail the sample of individuals surveyed. Table 1 presents demographic information including age, gender, ethnicity, income level, employment status, health insurance coverage, political affiliation, and sources of news media. Demographic information confirms that the sample is a diverse, representative sample of New Yorkers from minority communities.

Table 1. Sample Demographic Information

Demographics		Mean	SD
Age		28.09	8.62
		<i>N</i>	%
Sex			
	Male	164	46.5
	Female	185	52.4
Ethnicity			
	Caucasian	11	3.5
	Asian	147	46.4
	African American	88	27.8
	Hispanic	52	16.4
	Middle Eastern	4	1.3
	American Indian	2	0.6
	Other	13	4.1
Job Type			
	Working Now	183	52.1
	Looking for Work, Unemployed	60	17.1
	Temporarily Laid Off	8	2.3
	Student	76	21.7
	Disabled	7	2
	Keeping House	10	2.8
	Other	7	2
Income			
	\$13,300 or Less	26	7.4
	\$13,301 - \$17,120	11	3.1
	\$17,121 - \$25,000	22	6.3
	\$25,001 - \$40,000	54	15.4
	\$40,001 - \$55,000	42	12
	\$55,001 - \$70,000	46	13.1
	\$70,001 - \$90,000	39	11.1
	\$90,001 - \$130,000	53	15.1
	Above \$130,001	57	16.3
Education			
	High School	41	11.6
	GED or Equivalent	8	2.3
	Some College	68	19.3
	Associate Degree	21	5.9
	Bachelors	152	43.1

	Masters or PhD	53	15
	Professional School	9	2.5
Health Insurance Coverage			
	Through Employer	149	42.2
	Medicaid, MA, CHIP	122	34.6
	Directly from Insurance	96	27.2
	Medicare	20	5.7
	Tricare or Military Health Care	10	2.8
	Indian Health Service	6	1.7
	Any Other Type	29	8.2
	Not Covered	26	7.4
Political Affiliation			
	Democrat	213	60.7
	Republican	44	12.5
	Independent	60	17.1
	Not Registered	30	8.5
	Other	4	1.1
News Medium			
	News Mobile App	74	21
	Twitter	68	19.3
	Google	59	16.7
	Television	46	13
	YouTube	45	12.7
	Facebook	13	3.7
	Print Journal	4	1.1
	Other People	8	2.3
	Other	36	10.2
News Source			
	CNN News	82	23.2
	The New York Times	82	23.2
	ABC News	24	6.8
	Fox News	21	5.9
	CBS News	12	3.4
	MSNBC	11	3.1
	The Wall Street Journal	11	3.1
	NBC News	8	2.3
	Washington Post	8	2.3
	NPR	7	2
	Other	87	24.8

Table 2 presents some more targeted background statistics of the sample regarding their experiences with COVID-19, including whether they had been contacted by a contact tracer previously (overwhelmingly “No”; 94.6%), whether they believed COVID-19 is a hoax (overwhelmingly “No”; 98.8%), and whether participants or someone they knew personally had tested positive for COVID-19 (61.3% “Yes”).

Table 2

Questions about COVID		
	Yes	No
Contacted by Contact Tracer	5.40%	94.60%
Believe Covid is a Global Pandemic	98.60%	1.40%
Believe Covid is a Hoax	1.20%	98.80%
Believe news media is reporting accurate information	62.80%	37.20%
Tested + for COVID or know someone who has	61.30%	38.70%

N = 353

Next, we examined the descriptive statistics (means and standard deviations [SD]) of the focal variables of interest in this study as well as their inter-correlations. Table 3 presents these results, indicating strong positive correlations between the likelihood of compliance with contact tracing requests and the focal variables of 1) contact tracing knowledge and 2) trust in contact tracers, as well as with several other variables, including 3) trust in healthcare professionals, 4) trust in government health officials, 5) trust in the news media, and 6) health literacy. This suggests that people who are more trusting of these various targets and those who know more about contact tracing indicate stronger intentions to comply with contact tracing requests. There is also a significant negative correlation between the likelihood of compliance with political conservatism, suggesting that people who self-identify as more right-wing express a lower willingness to comply with contact tracing requests than those who identify as more left-wing. Financial insecurity and job insecurity seem largely unrelated or weakly related to the other variables of interest and are not correlated with the likelihood of contact tracing compliance.

Table 3. Descriptive Statistics and Correlations of Study Variables

<i>Descriptive Statistics and Correlations of Study Variables</i>													
<i>Outcome</i>	<i>Scale Range</i>	<i>M</i>	<i>SD</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>
1. Likelihood of Compliance	1-5	4.34	0.90	<i>(.94)</i>									
2. Contact Tracing Knowledge	0-1	0.78	0.12	.29 **	-								
3. Trust in Contact Tracers	1-5	3.80	0.73	.45 **	.22 **	<i>(.96)</i>							
4. Trust in Healthcare Professionals	1-5	4.00	0.71	.34 **	.16 **	.63 **	<i>(.95)</i>						
5. Trust in Government Health Officials	1-5	3.11	0.97	.21 **	.00	.45 **	.46 **	<i>(.97)</i>					
6. Trust in News Media	1-5	3.64	0.75	.26 **	.04	.50 **	.53 **	.41 **	<i>(.93)</i>				
7. Health Literacy	1-3	2.39	0.37	.14 *	.14 *	.11 *	.14 *	.04	.08	<i>(.76)</i>			
8. Financial Insecurity	1-5	2.47	0.92	-.04	-.12 *	-.08	-.05	-.06	-.14 *	-.08	<i>(.85)</i>		
9. Job Insecurity	1-5	2.90	0.77	-.02	.06	-.12 *	-.06	-.18 **	-.17 *	-.05	.37 **	<i>(.78)</i>	
10. Conservatism	1-7	2.95	1.48	-.24 **	-.32 **	-.16 *	-.14 *	.02 *	-.08	-.02	-.02	-.12 *	-

Note. Sample size (N) = 353. M = mean, SD = standard deviation. Cronbach's alpha reliability estimates are in italics and parentheses on the diagonal. Asterisks denote correlations that are significant at *p < .05 and **p < .001.

Tests of Direct Effects on Contact Tracer Compliance

To test the main propositions regarding determinants of contact tracer compliance, we first investigated direct effects of the focal variables on compliance intentions using linear regression. Table 4 presents the results of a multiple regression model with contact tracing knowledge, trust (in contact tracers, healthcare professionals, government health officials, and news media), health literacy, financial and job insecurity, and conservatism all predicting the likelihood of compliance. Together, these variables predicted 30% of the variance in intentions to comply with contact tracers. Also presented in Table 4 is the results of a relative weights analysis (Johnson & LeBreton, 2004), which demonstrates the proportional influence (toward the 30% predicted) of these predictors toward predicting compliance likelihood up to 100%, with stronger predictors explaining a higher percentage of unique variance (Tonidandel & LeBreton, 2011). Together, these results identify four predictors with meaningful direct influences on compliance with contact tracing requests; they are, ordered in terms of predictive strength: trust in contact tracers (predicting 38.71% of the total 30%), contact tracing knowledge (17.76% of the total), trust in healthcare professionals (14.25% of the total; all positive predictors), and conservatism (11.77% of the total; a negative predictor). These results point to four key direct

predictors of compliance with contact tracing requests, and provide some avenues for interventions to improve compliance (discussed below).

Table 4. Regression and Relative Weights Analysis Predicting the Likelihood of Contact Tracing Compliance

<i>Regression and Relative Weight Analysis Predicting the Likelihood of Contact Tracing Compliance</i>										
	<i>B</i>	<i>SE B</i>	<i>RW</i>	<i>CI-L</i>	<i>CI-U</i>	<i>RS-RW</i>	<i>R² Δ</i>	<i>F</i>	<i>df</i>	<i>p</i>
Overall Model							.30	15.87	9, 341	< .001
Contact Tracing Knowledge	1.29 *	0.38	.05 *	.01	.10	17.76%				
Trust in Contact Tracers	0.41 *	0.08	.10 *	.05	.16	38.71%				
Trust in Healthcare Professionals	0.08	0.08	.04 *	.01	.08	14.25%				
Trust in Government Health Officials	0.04	0.05	.02	-.01	.04	5.75%				
Trust in Media	0.04	0.07	.02	.00	.05	8.09%				
Health Literacy	0.16	0.11	.01	-.01	.04	3.31%				
Financial Insecurity	0.01	0.05	.00	-.03	.00	0.13%				
Job Insecurity	-0.02	0.06	.00	-.03	.01	0.23%				
Liberal/Conservative	-0.07 *	0.03	.03 *	.01	.07	11.77%				

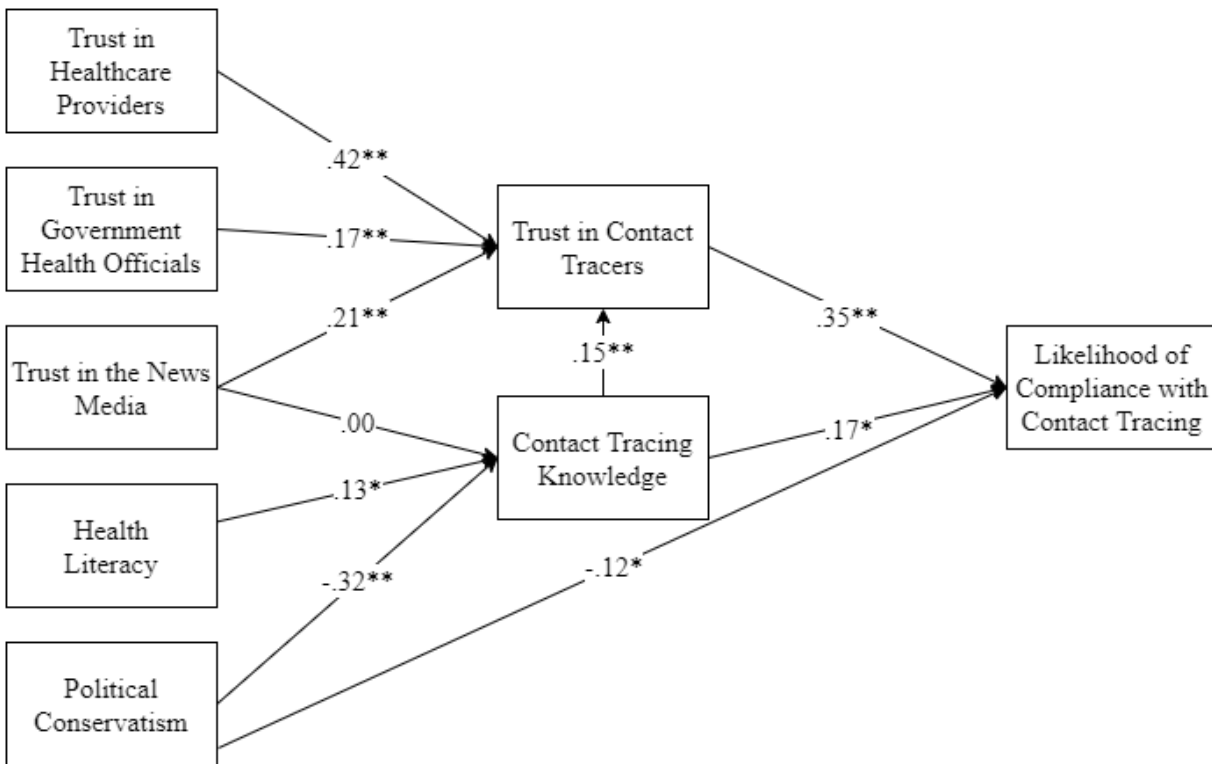
Note. RW = raw relative weight; CI-L = lower bound of 95% confidence interval; CI-U = upper bound of 95% confidence interval; RS-RW = relative weight rescaled as a percentage of predicted variance in the criterion variable attributed to each predictor. **p* < .05

Tests of Indirect Effects on Contact Tracer Compliance

Whereas the above analyses point to direct influences on compliance, it may also be the case that the variables investigated here do not have a direct influence, but instead indirectly influence compliance through their relationship with one of the proximal predictors of knowledge about or trust in contact tracers. Using structural equation modeling techniques, we tested this possibility in a mediation model with contact tracing knowledge and trust in contact tracers as mediators between several of the other predictor variables and likelihood of compliance. Specifically, we expected that trust in healthcare professionals, government health officials, and the media, would all be associated with increased likelihood of contact tracing compliance by increasing trust in contact tracers. We also anticipated that health literacy, trust in media, and political liberalism would be associated with increased compliance by increasing one's knowledge about contact tracing efforts. Finally, given the relation between knowledge and trust described above, we expected knowledge of contact tracing would also indirectly improve likelihood of compliance by increasing trust in contact tracers.

The predicted model and results are presented in Figure 1. The data were an excellent fit to the model, $\chi^2(5) = 7.65$, $p = .177$, CFI = 0.993, TLI = 0.975, RMSEA = .039 [90% CI: .00, .09], SRMR = .026. Similar to what was found in the regression model, only trust in contact tracers, knowledge of contact tracing, and conservatism directly predicted the likelihood of contact tracing compliance. As expected, however, several variables had indirect effects on compliance likelihood via associated increases in contact tracer trust and/or contact tracing knowledge (Table 5). Specifically, trust in healthcare professionals, trust in government health officials, and trust in the media all positively predicted compliance indirectly through their positive effects on trust in contact tracers; as these trust levels increased, so did trust in contact tracers which in turn increased intentions to comply with contact tracer directives. Additionally, health literacy and liberalism (although not trust in media), both positively predicted compliance indirectly through their effects on increased knowledge about contact tracing—as literacy increased and political leaning became more liberal, knowledge about contact tracing increased therein increasing contact tracer compliance. Finally, as expected, knowledge about contact tracing increased trust in contact tracers, thereby enhancing the positive effects of knowledge on the likelihood of compliance with contact tracing requests. In short, these findings help identify some of the sources of distrust and misinformation that may need to be addressed in order to increase individuals' compliance with contact tracing requests.

Figure 1. Structural Equation Model Predicting Trust in Contact Tracers, Contact Tracing Knowledge, and Likelihood of Compliance with Contact Tracing Requests.



Note. Statistical significance of direct effects is noted with asterisks (* $p < .05$, ** $p < .001$). Indirect effects are presented in Table 5.

Table 5. Mediation Model Results

<i>Mediation Model Results</i>				
	<i>B</i>	<i>SE B</i>	<i>CI-L</i>	<i>CI-U</i>
Direct Effects on Trust in Contact Tracers				
Trust in Healthcare Professionals » Trust in Contact Tracers	.42 **	.06	.29	.54
Trust in Government Health Officials » Trust in Contact Tracers	.17 **	.05	.08	.27
Trust in News Media » Trust in Contact Tracers	.21 **	.06	.10	.32
Contact Tracing Knowledge » Trust in Contact Tracers	.15 **	.04	.08	.22
Direct Effects on Contact Tracing Knowledge				
Health Literacy » Contact Tracing Knowledge	.13 *	.06	.02	.24
Political Conservatism » Contact Tracing Knowledge	-.32 **	.05	-.42	-.21
Trust in News Media » Contact Tracing Knowledge	.00	.05	-.11	.11
Direct Effects on Likelihood of Compliance with Contact Tracing Requests				
Trust in Contact Tracing » Compliance	.35 **	.07	.22	.48
Contact Tracing Knowledge » Compliance	.17 *	.05	.06	.27
Trust in Healthcare Providers » Compliance	.07	.07	-.06	.20
Trust in Government Health Officials » Compliance	.05	.05	-.04	.14
Political Conservatism » Compliance	-.12 *	.05	-.22	-.02
Health Literacy » Contact Tracing Knowledge	.07	.05	-.03	.16
Indirect Effects on Likelihood of Compliance with Contact Tracing Requests				
Trust in Healthcare Professionals » Trust in Contact Tracers » Compliance	.14 **	.04	.08	.22
Trust in Government Health Officials » Trust in Contact Tracers » Compliance	.06 *	.02	.03	.10
Trust in News Media » Trust in Contact Tracers » Compliance	.07 *	.03	.03	.13
Contact Tracing Knowledge » Trust in Contact Tracers » Compliance	.05 **	.02	.02	.09
Health Literacy » Contact Tracing Knowledge » Compliance	.02 *	.01	.00	.05
Political Conservatism » Contact Tracing Knowledge » Compliance	-.05 *	.02	-.09	-.02
Trust in News Media » Contact Tracing Knowledge » Compliance	.00	.01	-.02	.02
Health Literacy » Contact Tracing Knowledge » Trust in Contact Tracers » Compliance	.01	.00	.00	.02
Political Conservatism » Contact Tracing Knowledge » Trust in Contact Tracers » Compliance	-.02 *	.01	-.03	-.01
Trust in News Media » Contact Tracing Knowledge » Trust in Contact Tracers » Compliance	.00	.00	-.01	.01

Note. Sample size, $N = 353$. All parameter estimates and standard errors are standardized. CI-L = lower bound of 95% confidence interval; CI-U = upper bound of 95% confidence interval. Standard errors and confidence intervals are based on 10,000 bootstrapped resamples. * $p < .05$, ** $p < .001$

Open-Ended Responses

Finally, to provide more context to these quantitative results and to explore other untested predictors of distrust and misinformation, we categorized responses to the open-ended questions into similar content categories to provide a picture of how respondents in minority communities understand contact tracing, and factors related to their trust in contact tracers.

First, respondents were asked to describe, in their own words, who are contact tracers. Of those who responded, the overwhelming majority (89.17%) of the open-ended responses were generally accurate about who are contact tracers and/or what are their roles. Interestingly,

whereas respondents had a fairly accurate general understanding of contact tracer/tracing, results of the knowledge test show endorsement of beliefs about contact tracing that likely affects trust in contact tracing. For instance, 11.6% of the sample answered a knowledge test item in a way that suggested they believed information shared with contact tracers could also be shared with the general public, local law enforcement, or state/local government. This perspective is in direct odds with New York State legislation specifically making it illegal to share contact tracing information (see New York State Assembly Bill A10500C/New York State Senate Bill S8450C). Likewise, nearly 10% of the respondents responded “True” to a question on the knowledge test about contact tracers reporting individuals to public officials for punishment. In short, although people do have generally accurate knowledge about contact tracing, a sizeable number of respondents still believe false information. Importantly, 9.12% and 4.27% of the responses concerning who are contact tracers referenced either public health/health care officials, or government agencies, respectively. These results point to the need to consider factors related to trust in healthcare and trust in government, as well as battling misinformation about contact tracing when considering minority individuals’ views of contact tracing.

Second, respondents answered whether or not they believed contact tracers could “get you in trouble for not following public health guidelines.” Unlike the knowledge test, respondents were about equally split between believing they could (37.43%) and could not (40%) with the remaining responses indicating uncertainty (18.57%) or a lack of a clear response (4%). These results further support the idea that, whereas they seem to have a generally accurate overall view of contact tracing, respondents’ knowledge of specific policies and procedures is less clear. As discussed next, this appears to be one avenue through which trust in contact tracers can be improved.

Third, respondents answered three questions regarding their willingness to comply with requests of contact tracers. First, 4.53% of respondents said they would never comply with a contact tracer. Although this is a small number, research has shown that the spread of COVID-19 can be exacerbated with only few noncompliant individuals (Kretzschmar et al., 2020). Second, half of the respondents (50.14%) indicated that they would comply with contact tracers if it was forced and/or necessary due to infection. Respondents were then asked (1) what would make it more likely that they would comply with contact tracer guidance, and (2) what would make it more likely that they would trust a contact tracer. Table 6 presents the frequency of responses in each category for the *likely to comply* question; Table 7 presents the frequency of responses in each category for the *likely to trust* question. These categorizations allowed for a single response to be included in more than one category. Regarding *likelihood to comply*, the most frequently occurring responses indicated (a) a willingness to follow all requests and (b) compliance if it was necessary due to exposure or health/safety concerns (about 14% each). This is encouraging insofar as these respondents are likely to comply with tracer requests. Other categories in which responses were frequent include (c) the contact tracer having a valid reason to contact the individual, (d) the contact tracer clearly communicating the goals of contact tracing/guidelines to follow, and (e) contact tracers being polite or having positive interactions with the tracer.

Table 6. Frequency of responses within content categories to the question: “What would make it more likely that you would follow a contact tracer’s guidance?”

Category	Percentage of Responses
Will Follow All Requests	14.59%
Necessary due to Exposure/Health and Safety Considerations	14.32%
Valid Rationale for the Contact	11.89%
Clear Communication about Guidelines/Goals	11.89%
Positive Interaction/Politeness of Contact Tracer	10.54%
Trust in Contact Tracer Skills	6.49%
Protect Anonymity	4.05%
Mandated by Law/Penalty for Noncompliance	3.51%
Won't Follow Regardless of Anything	2.97%
Alternate Technology	2.43%
Monetary Incentives	2.16%
Contact Tracer's Identity Can Be Verified	2.16%
Reminders/Check-Ins with Contactee	1.89%
Other	1.08%
Peer Influence/Social Pressure	0.81%
Increased Accountability of Contact Tracer	0.81%
Unclear	12.16%

Notes. Individual responses are counted in more than one category if applicable.

Finally, regarding *willingness to trust* (Table 7), respondents indicated more willingness to trust the tracer if communication is respectful and kind (19.94% of responses), if the tracer communicates their role and advice clearly (11.90%), and if the tracer can provide valid reasons for contacting the individual and/or information about the spread (10.12%). Finally, concerns about data privacy/confidentiality were raised (9.52%). In all, these results are encouraging insofar as these are actions/behaviors that are largely trainable in contact tracers, and, given the quantitative results above, improving trust in contact tracers is associated with reported willingness to comply with tracing requests.

Table 7. Frequency of responses within categories to the question: “What do you think contact tracers could do or say to make it more likely that you would trust and listen to them?”

Category	Percentage of Responses
Respectful/Kind Communication from the Contact Tracer	19.94
Contact Tracer Communicates Clearly (About their role/advice)	11.90
Contact Tracer Provides Rationale for Contact/Accurate Evidence of Spread	10.12
Confidentiality/Data Privacy	9.52
Contact Tracer can Prove Identity/Is from a Trusted Source	7.14
Contact Tracer Information about Contactee is Accurate	4.17
Contact Tracer is Trained	2.68
Monetary Incentives for Compliance/Monetary Punishment for Noncompliance	2.68
No Punishment for being Close to Spread	2.08
Would be Punished for not Complying	1.79
Follow-Up with the Contactee	1.49
Convenience of Contact/Digital Methods	0.89
Nothing--Willing to Trust	9.23
Nothing--Unwilling to Trust/Participate in Tracing	1.49
Nothing--Unclear	5.06
Unsure	7.74
Unclassified	3.87

Notes. Individual responses are counted in more than one category if applicable.

Main Study Findings

The results of our survey of New Yorkers from a minority racial/ethnic background detail the degree of misinformation and distrust that exist regarding contact tracers and identify several factors that may influence the likelihood of minority individuals’ willingness to comply with contact tracing requests. Synthesizing across the different findings, we highlight four broad sets of conclusions. First, based on scores on the knowledge test and coding of open-ended responses, the sample demonstrated a relatively good understanding of basic facts and information about contact tracing; however, the amount of variability in scores and responses suggests some

persistence of misinformation. Second, trust in contact tracers was, on average, neutral ($M = 3.80$), but with a wide degree of variability as well ($SD = 0.73$). This suggests that, although, on average, the minority individuals sampled here did somewhat trust contact tracers, there were also a sizable number who did not. These first two takeaways highlight the extent to which misinformation and distrust of contact tracing exists in minority groups.

Third, results of our main analyses paint a clear picture about the importance of both misinformation and distrust as determinants of contact tracing compliance. Across all analyses, three variables significantly and directly predicted the likelihood of compliance (in order of relative strength): trust in contact tracers, contact tracing knowledge, and political partisanship. This suggests that individuals in minority groups need to see contact tracers as reliable, competent, and concerned in their own interests (McAllister, 1995; Spreitzer & Mishra, 1999)¹, in order to follow their guidance. Additionally, the more minority individuals know about contact tracers, including what they do, what information they gather, their individual rights and responsibilities when responding to tracing requests, and the importance of contact tracing in the fight against COVID-19, the more likely they are to comply with contact tracing requests. These results were supported by the content of open-ended questions asking respondents about factors that would increase their willingness to comply and trust contact tracers. This is key given that health-related knowledge is an important predictor of health-related behaviors (Beier & Ackerman, 2005); as such, informing minority groups about contact tracing should combat misinformation (Chan et al., 2017) and therein increase compliance with contact tracing requests. Also, in support of recent research showing the power of political partisanship in the response to COVID-19 (Gollwitzer et al., 2020; Pew Research Center, 2020), our results demonstrate that

¹ We note that, although this might also be true of nonminority individuals, the goals of this study were to understand antecedents of compliance in minority individuals.

even in minority communities in New York state, those who identify as more right-leaning in their ideological beliefs indicate they are less willing to comply with contact tracing requests. This emphasizes the need for clear messaging and the need to proactively foster trust and knowledge sharing across the political spectrum. Importantly, we found no evidence that financial or job insecurity impacted individuals' likelihood of compliance.

Fourth, in addition to these direct effects, our results show that a number of other factors may increase contact tracing compliance indirectly by virtue of increasing trust or knowledge. Specifically, trust in healthcare providers, government health officials, and the news media, are all associated with increased likelihood of compliance through their positive prediction of trust in contact tracers. Content of open-ended responses echo this insofar as some respondents view contact tracers as representatives of healthcare systems and/or government agencies, and consistently said that accurate information about COVID-19 spread would likely influence their trust and willingness to comply with contact tracers. This means that minority individuals' healthcare providers, public health officials, and news sources may influence adherence to contact tracing guidance. This is consistent with research from past pandemics showing that trust in both the government and the media is associated with preventive behaviors such as hand washing (Liao et al., 2011). Thus, it is critical that these various sources to which people turn for health-related treatment and information build trust in contact tracers by conveying positive messages concerning their dependability and competence, and the extent to which minority communities can trust contact tracers to help keep them and others safe from COVID-19 spread.

In addition, health literacy and political liberalism also demonstrated a significant indirect effect on contact tracing compliance through increased contact tracing knowledge. These findings demonstrate a knowledge-based, as opposed to trust-based, pathway for increasing

minority individuals' compliance with contact tracing requests. Specifically, individuals' ability to obtain, communicate, process, and understand general health information and services (i.e., those with higher health literacy; CDC, 2020) equips them with the foundation they need to acquire knowledge about contact tracing and see compliance as important. Additionally, partisan messages about the threat of COVID-19 and the appropriate response may encourage politically-motivated information processing (Van Bavel & Pereira, 2018) whereby information about contact tracing and its efficacy is diminished, resulting in a reduced likelihood of compliance. Taken together, efforts to increase health literacy and challenge partisan messaging that downplays the severity of the COVID-19 virus may be critical precursors to contact tracing compliance by providing a firmer foundation of contact tracing knowledge.

Finally, we found evidence that contact tracing knowledge also positively predicts trust in contact tracers. As posited by theories of trust development (Lewis & Weigert, 1985; Nunkoo et al., 2018), increased knowledge about a target of trust can facilitate trust development. Our results support this pathway for developing trust in contact tracers. Thus, the more individuals from minority groups know about contact tracing, the more likely they are to see the individuals who perform this work as dependable, competent, and interested in the communities' health and safety, and therein trust contact tracers. This is an important finding, as combating misinformation and increasing knowledge may, in fact, be easier than increasing minority groups' underlying trust in contact tracers directly. Building trust takes time, and minority communities have a history of distrust with healthcare and the government to overcome (Kennedy et al., 2007; Whetten et al., 2006). Indeed, one respondent echoed such concerns in their open-ended response regarding what contact tracers could do to that might encourage compliance: "I don't know, government officials lie all the time, and trust is earned in drops and

lost in buckets.” On the other hand, many of the open-ended responses suggested that developing trust and encouraging compliance would be aided if contact tracers could provide clear explanations of their roles so that individuals understood the important work contact tracers do. In short, efforts to increase knowledge of the role of contact tracing in the fight against COVID-19 may be beneficial both directly on compliance and indirectly through trust.

Policy Recommendations

Based on the findings presented here we present the following set of four policy recommendations to improve contact tracing in minority communities.

Recommendation #1: Combat Misinformation by sharing simple, accurate information about the basics and efficacy of contact tracing. Many of the myths and misinformation surrounding contact tracing are related to issues of individual confidentiality (e.g., telling people who is their infected contact), data privacy (e.g., that contact tracers track your movements on your phone), and possible punishment for contact tracing non-compliance (e.g., that contact tracers share information with law enforcement or ICE). For example, one respondent noted that they would be more likely to trust contact tracers if “...they will literally never talk to cops about anything...” suggesting misinformation about the role of law enforcement in contact tracing.

An important part of debunking myths and misinformation is providing clear, simple, and consistent messaging, that fills knowledge gaps and challenges myth without detailed elaboration on the myth itself (Chan et al., 2017; Lewandowsky et al., 2012; Pennycook et al., 2020). In other words: focus messages on the solution or the correct information, without providing too much detail about the myth or problematic misinformation. This could include simple, brief advertisements promoting accurate contact tracing knowledge that target minority communities, specifically. Other evidence-based practices for debunking myths and the spread of incorrect

information include (a) encouraging a healthy skepticism of faulty information from low-quality, untrusted sources such as by nudging people to think about the accuracy of headlines on social media or the news, especially from partisan non-news sources (Pennycook et al., 2020), (b) using affirming, positive messages rather than threatening, negative messages, and (c) using simple, brief messages and graphics since part of the attractiveness of many myths is that they are simple, making them easier to process and remember (Chan et al., 2017; Lewandowsky et al., 2012). One of the benefits of combating contact tracing misinformation by effectively sharing simple, accurate information is that the effects should build broader knowledge in COVID-19 and effective responses to manage this and other virus spread. This increase in health literacy could have far-reaching effects for improving minority individuals' ability to make effective healthcare decisions now and in the future (CDC, 2020), since low health literacy in minority communities is a key driver of minority health disparities in a variety of outcomes (e.g., higher mortality rates, poorer health outcomes, and reduced access to care; Berkman et al., 2011).

Recommendation #2: Combat distrust in contact tracers by clearly detailing the motives and authority of contact tracers, the confidentiality of the information gathered, and the effectiveness of this method of controlling COVID-19 spread. Involve healthcare professionals, government health officials, and the news media in building trust.

Our results demonstrate that the strongest predictor of the likelihood of compliance with contact tracing requests is whether or not the individual trusts the contact tracers. Our results also identify several precursors to minorities' trust in contact tracers, including the trust these individuals place in healthcare providers, government health officials, and the news media, and knowledge of contact tracing. Although it may be difficult to build trust in minority communities where past experiences of mistreatment by healthcare and the government (e.g., Kennedy et al.,

2007; Whetten et al., 2006), our results and the responses from minority individuals in our sample suggest a number of possible methods. First, our recommendations for building knowledge and combating misinformation (#1 above), should also help foster trust because an essential component of trust in another's competence and reliability is an accurate understanding of the motives and purpose of that party (Lewis & Weigert, 1985; Nunkoo et al., 2018). This is consistent with the suggestions we received from minority individuals who indicated they would be more willing to trust contact tracers if they knew why contact tracers were gathering information and how they would be using that information. For example, one respondent suggested that they would be more likely to trust a contact tracer if the tracer "explain [SIC] the situation and why tracing is necessary to slow down the spread of COVID." Similarly, another respondent noted that they would trust a contact tracer more if there were "reassurance that personal information will not be released." These, and similar responses, point to avenues by which contact tracers can build trust in a short window of time.

Second, trust is built when individuals know that the person with whom they are communicating has their best interests in mind (McAllister, 1995). Thus, communicating the importance of contact tracing for protecting individual health and preventing community spread, while also emphasizing their commitment to data security and safeguards to protect individuals' confidentiality will help to relieve fear of punishment by the authorities or their contacts for compliance with tracing requests. Indeed, some respondents feared punishment as a result of sharing information saying that contact tracers can "Stress that I am not in any sort of trouble," or "If they make it clear that you won't get in trouble with law enforcement for sharing certain information and that everything you say will be confidential."

Contact tracers themselves can certainly convey this commitment to community health and individuals' identity protection, but it may be more effective in building trust if corroborated by messaging from minority individuals' primary healthcare providers, government health officials, and news media sources (Habersaat et al., 2020; Liao et al., 2011). It is worth noting that some of the distrust in contact tracing among minority populations may be exaggerated by perceived connections between contact tracers and the government authorities, including law enforcement and ICE, so maintaining clear separation between these sources and clearly communicating that separation may also help build trust in contact tracers.

Recommendation #3: Ensure contact tracers have the skills and knowledge they need to clearly and respectfully communicate with individuals from minority groups in order to build trust in contact tracing skills

Given the essential role of trust as a precursor to minority individuals' compliance with contact tracing requests, it is not surprising that the actual behavior of contact tracers may be pivotal in building trust and ensuring compliance. Several of the factors most often cited by minority individuals in this study as important for increasing the likelihood that they would trust and comply with contact tracers centered on the communication methods employed by contact tracers. First, participants indicated that interpersonal communication that was "kind," "respectful," "courteous," "compassionate," "personable," "friendly," "calm," "attentive," "caring," and "empathetic" would be more effective at building trust and ensuring compliance with contact tracing requests than communication that was "threatening," or "punitive." Second, participants also noted the importance of directly communicating accurate information, statistics, rationale, and guidance that were "clear," "honest," "open," "straightforward," but also "evidence-[based]," "factual," and "knowledgeable." Therefore, because contact tracers are, in

many ways, on the front lines communicating with community members to help mitigate the spread of the COVID-19 virus, it is important that they are equipped with the necessary knowledge and skill they need to do their jobs effectively. In the context of contacting individuals from racial/ethnic minority groups and building trust in these communities, this means being respectful, compassionate, direct, and knowledgeable. Contact tracer personnel selection criteria and training requirements (e.g., Gurley, 2020), should be reviewed to ensure coverage of these interpersonal communication skills to enhance the effectiveness of contact tracing in minority communities. A particular emphasis on selecting for/training cultural competence may be valuable given the relation between minority individuals' distrust in healthcare and a lack of cultural competency among healthcare providers (Kennedy et al., 2007). Indeed, one respondent noted that their trust in a contact tracer would increase by "Having someone of my own ethnicity as the contact tracer." Matching tracer race/ethnicity to individual race/ethnicity may not be feasible, but ensuring cultural competence of tracers is possible with training and/or selection.

Recommendation #4: Combat politically polarized responses to contact tracing through values-affirming messaging and targeted efforts to engage conservative media outlets. An important part of the fight against disinformation is to target partisan messaging, as political ideology is a strong determinant of belief in COVID-19 and measures taken to respond to the virus (Gollwitzer et al., 2020; Pew Research Center, 2020). The findings presented here suggest that right-wing partisanship has a negative influence on contact tracing knowledge, trust, and willingness to comply with contact tracing requests, so this influence cannot be ignored. Although it is difficult to combat misinformation when myths are firmly affixed in one's worldviews or values, including being tied to partisan identity, it is nevertheless possible (Chan

et al., 2017; Lewandowsky et al., 2012). Presenting accurate information that challenges partisan myths about contact tracing or COVID-19 may be more effective if done in a way that affirms the worldview and values held by individuals from all ideological perspectives, including by presenting contact tracing as an opportunity to protect one's self, family, community, and country and highlighting the benefits of reduced virus spread, rather than focusing on threats and risk of noncompliance (Habersaat et al., 2020; Lewandowsky et al., 2012). Indeed, responses to the open-ended questions point to the potential efficacy of this; one respondent noted that they were more likely to trust a contact tracer "If they talked about the negative consequences such as how it would affect the local community and individuals." Likewise, many of the respondents noted a willingness to comply with contact tracing requests if it meant protecting loved ones. Bipartisan messaging that highlights the benefits of contact tracing for one's community and/or family is likely to benefit contact tracing efforts. Additionally, the WHO (2007) and others (Habersaat et al., 2020) recommend de-polarizing public health issues by reaching out to individuals through media sources conservatives and liberals value and trust, including audience-specific national platforms, local outlets, and social media (Mullen et al., 1997).

Conclusion

As long as the Corona Virus pandemic continues, minority individuals are at a higher risk of contracting and spreading this disease. Public health and government officials will need to take bold actions to mitigate the spread in these disenfranchised communities. Among the options available to them is a robust contact tracing system. Contact tracing can help slow the spread of infectious diseases, but only when those who are contacted comply—gaining this trust might be particularly difficult in minority communities. Fortunately, the results of our study shows factors that can improve trust in and knowledge of contact tracing therein improving

intentions to comply with tracing efforts. Based on these results, we see four clear avenues that officials can pursue to improve contact tracing compliance in minority communities therein battling the systemic minority health disparities related to COVID-19.

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