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# The Political Consequences of Depression: How Conspiracy Beliefs, Participatory Inclinations, and Depression Affect Support for Political Violence 🕕 😂

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**Abstract:** Depression can affect individuals' attitudes by enhancing cognitive biases and altering perceptions of control. We investigate the relationship between depressive symptoms and Americans' attitudes regarding domestic extremist violence. We develop a theory that suggests the association between depression and support for political violence depends on conspiracy beliefs, participatory inclinations, and their combination. We test our theory using a two-wave national survey panel from November 2020 and January 2021. We find that among those who hold conspiracy beliefs and/or have participatory inclinations, depression is positively associated with support for election violence and the January 6 Capitol riots. The participatory inclination dynamic is particularly strong for men. Our findings reveal how the intersection of two concerning features of American society—poor mental health and conspiratorial beliefs—strongly relate to another feature: support for political violence. The results also make clear that interventions aimed at addressing depression can potentially have substantial political consequences.

**Verification Materials:** The data and materials required to verify the computational reproducibility of the results, procedures, and analyses in this article are available on the *American Journal of Political Science* Dataverse within the Harvard Dataverse Network, at: https://doi.org/10.7910/DVN/XMHS0J.

epression can affect individuals' attitudes by amplifying cognitive biases and altering perceptions of control (Park et al. 2016). This can have important political implications. Researchers have found links between depression and reduced political participation (Landwehr and Ojeda 2021), as well as reduced support for right-wing parties (Bernardi 2021). Others look at how politics affects mental health, showing, for example, that the current highly polarized state of Amer-

ican politics may lead to sleep loss and emotional distress (Smith, Hibbing, and Hibbing 2019). Nonetheless, despite media attention to the possible role of severe mental illness in a small minority of mass shootings, academic research suggests only a weak, and not necessarily causal, association between depression and committing acts of violence (Skeem and Mulvey 2020). Even less certain is whether depression correlates with support for political violence and, if so, under what circumstances.

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This is an open access article under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited. Notwithstanding these examples, political science research mostly ignores mental health.

We seek to fill this gap by investigating whether and how mental health during the COVID-19 pandemic related to Americans' attitudes regarding domestic extremist political violence in the context of the 2020 election and the January 6 storming of the U.S. Capitol. Ultimately, this provides insight into the relationship between individuals' mental health and the nation's political health. We specifically identify the conditions under which depressive symptoms (henceforth referred to as "depression") are associated with attitudes toward violence. We then test our hypotheses with a large panel survey that included three operationalizations of support for violence (both actual and hypothetical), before and after the January 6 Capitol insurrection.

Our findings support our expectations: We find that among those who hold conspiracy beliefs and/or have participatory inclinations, depression is positively associated with support for election violence and the Capitol riot. These findings regarding a participatory inclination are particularly robust for men. They also show that the intersection of two widely discussed and concerning features of American society-depression and conspiratorial beliefs-is associated with another alarming outcome: support for political violence. It is thus plausible that interventions to reduce depression could substantially reduce support for violence (as we show below, potentially by 15 percentage points or more). These relationships suggest that taking steps to vitiate the illness (rather than criticize those experiencing it) could be vital not only for personal and public health but also for democracy.

## The Psychology of Support for Political Violence

Democratic backsliding can occur via violent overthrows (e.g., coups) or the gradual erosion of democratic norms (Levitsky and Ziblatt 2018). Scholars of American politics have recently focused on people privileging their partisan goals over democratic processes either by justifying partisan violence (Kalmoe and Mason 2022) or endorsing the violation of norms (Graham and Svolik 2020). We explore support for and acceptance of actors who engage in violence against the government (as opposed to personally engaging in violence). This need not involve partisan motivations among competing sides with distinct ideologies. Rather, it can entail the acceptance of violence as a way of managing conflict (Peirce 1877). It normalizes violence for those who engage in it and thus may embolden them; it involves the devolution of a norm against violence. Specifically, we study the factors connected with support for violence in a particular context (i.e., presidential elections) and in response to a specific event (i.e., the January 6 insurrection). These types of supportive attitudes can signify democratic backsliding (Bermeo 2016).

### When Does Depression Exacerbate Support for Violence?

Depression is a common mood disorder where an individual experiences a persistent feeling of sadness and hopelessness and/or loses interest in most activities. The Diagnostic and Statistical Manual of Mental Disorders (5th ed.; DSM-5; American Psychiatric Association, 2013) states that a diagnosis of a major depressive episode is appropriate when an individual experiences five or more of nine identified symptoms for at least 2 weeks. These include a depressed mood, diminished interest in daily activities, significant weight loss or gain, sleep difficulties, slowing of thought and reduction of physical movement, fatigue, feelings of worthlessness or excessive guilt, diminished ability to concentrate or make decisions, and recurrent suicidal ideation.<sup>1</sup> In 2019, roughly 7% of U.S. adults experienced moderate or severe depression (Villarroel and Terlizzi 2020). This jumped with the COVID-19 pandemic to roughly 33% in 2021 (Ettman et al. 2022). Even during less traumatic times, depression constitutes a leading cause of disability (Mathers 2008) and is the most prevalent mental health disorder in advanced societies (Lépine and Briley 2011). Further, as Ojeda (2015, 1226) aptly states, "depression is a political phenomenon.... [I]t has political consequences" (italics in original). While Ojeda and a few others explore depression's relation to various aspects of politics (e.g., Bernardi 2021; Smith, Hibbing, and Hibbing 2019), support for political violence has largely evaded attention.

This is a difficult topic due to common media portrayals of violence (e.g., mass shootings) as stemming from mental health problems (Dewan 2022). This simplistic and inaccurate depiction risks stigmatizing those suffering from mental illness. At the same time, it is important to understand the conditions under which mental health may contribute to support for political violence, considering concerns about the rise of both

<sup>&</sup>lt;sup>1</sup>The first two criteria are seen as primary; the latter seven are seen as secondary.

phenomena. It is a question that thus far has no apparent answer (Misiak et al. 2019). There clearly does not exist a one-to-one relationship between mental illness generally, or depressive symptoms specifically, and support for violence (or violent acts; Skeem and Mulvey 2020). The question becomes whether facilitating factors increase the likelihood of such a relationship.

To address this question, we first note that depression is often accompanied by a sense of a loss of control, particularly an external locus of control. This brings with it a feeling that outcomes depend on powerful others, chance, fate, or luck (e.g., Cheng et al. 2013; Wiersma et al. 2011). Depression also operates as a heterogeneous concept, reflecting a range of disorders with highly variable features and pathophysiology (Buch and Liston 2021). In some instances, perhaps the modal instance, depression generates fear, passivity, and a loss of interest due to feelings of low control (O'Connor et al. 2002)a situation that often quells efforts to regain control and lowers self-efficacy. Such scenarios dampen political activities; indeed, Landwehr and Ojeda (2021) show that, across four countries, depressive symptoms substantially reduce the probability of voting by diminishing political motivation and physical energy (see also Ojeda 2015; Ojeda and Pacheco 2019). Though not explored, it follows that depression would, if anything, decrease support for political violence, given reduced expectations of the possibility of regaining control or inducing change.

In other instances, those suffering from depression experience aggressiveness or anger (Fava 1998; Judd et al. 2013) that prompts them to seek to regain their lost sense of control (Crona et al. 2017). They can do this by taking or supporting actions, including those that are violent. One such lever is conspiracy beliefs-that is, efforts to explain an event by invoking the machinations of powerful people who attempt to conceal their role while pursuing malevolent goals (Sunstein and Vermeule 2009). Conspiracy ideation comes in many guises, including allegations that governmental entities act for nefarious purposes (van Prooijen and Douglas 2017). When someone with depression adopts governmental conspiracy theories, they (1) gain a sense of control by providing explanations for what is wrong (Moulding et al. 2016; van Prooijen and Douglas 2017), (2) gain a target of attribution for feeling poorly (Levinsson et al. 2021), and (3) lose trust in the system, leading to a belief that change (and, consequently, regaining control and feeling better) needs to occur through extra-systemic processes that include supporting violence (Webber et al. 2020). Conspiracy theories thus produce narratives that can lead someone suffering from depression to support violence, thinking it can increase control and decrease depressive symptoms.<sup>2</sup>

*H1*: All else equal, depression will be positively associated with support for political violence when accompanied by high levels of conspiratorial beliefs (relative to when it is not accompanied by such beliefs).

Another factor that could prompt a control response is activity level. For example, Toker and Biron (2012) show that, generally, engaging in activity tempers depression by providing a sense of control. Of course, as mentioned, those with depression are relatively less likely to participate politically; however, participation has a habitual component (e.g., Aldrich, Montgomery, and Wood 2011).<sup>3</sup> Thus, in politics, those with such a participatory inclination (i.e., regularly, or recently participated in politics) may view political action as a means of regaining control. Along these lines, Montgomery, Dumas, and Torres (2015) show that political participation fosters perceptions of control such that individuals feel capable of altering political outcomes: "engagement itself can affect subsequent control beliefs" (8; also see Skinner 1996).<sup>4</sup> Accordingly, an individual with a high participatory inclination who experiences depression will likely view taking or supporting political actions as a means of regaining control. Such participation can include supporting political violence, for two reasons. First, from the perspective of those with otherwise high participatory inclinations, depression will relatively reduce feelings of self-control (as explained), and lower self-control correlates with supporting violence (Perry, Wikström, and Roman 2018; Rottweiler and Gill 2022). Second, from the perspective of those otherwise experiencing depression, participatory inclinations will counter the feelings of insignificance that depression engenders and embolden taking actions, including supporting violence (Bartusevičius et al. 2021). Notably, supporting violence can increase feelings of significance (Kruglanski et al. 2014, 59; Molinario et al. 2022). Thus, the intersection of depression and a high participatory inclination increases the likelihood of supporting violence.

<sup>2</sup>Others show a direct relationship between conspiracy beliefs and support for violence (e.g., Jolley and Paterson 2020). We predict that this effect will be exacerbated by depression.

<sup>3</sup>Most focus on the habit of turning out to vote; however, other forms of participation likely have habitual components (e.g., Micheletti and Stolle 2012) among those engaged in politics (e.g., Krupnikov and Ryan 2022).

<sup>4</sup>Variables that correlate with participatory inclinations can indirectly serve as proxies, most notable among them being efficacy, which has been otherwise linked to control (Bandura 2000) and reactions to violence/transgressions (Young 2020). *H2*: All else equal, depression will be positively associated with support for political violence when accompanied by a high participatory inclination (relative to when it is not accompanied by such an inclination).

Finally, in combination, conspiratorial beliefs and a high participatory inclination will reinforce one another and lead to even greater support for violence among depressed individuals. Conspiracy beliefs provide a *target*, and a high participatory inclination offers a *vehicle* for control. This mix, given that it envelops an attribution and a mechanism, should generate more support for violence than the presence of either moderating factor on its own.

*H3*: All else equal, depression will be most strongly positively associated with support for political violence when accompanied by both high levels of conspiratorial beliefs and a high participatory inclination (relative to when only conspiratorial beliefs or a high participatory inclination is present).

In sum, we predict that given conspiracy beliefs and/or a high participatory inclination, the passivity underlying depression is transformed into action, leading to a relationship with support for violence. These variables mean those suffering from depression become more likely to view violence as a pathway for regaining control and significance, and hence to support it.

In addition to our three hypotheses, we offer a corollary based on research suggesting that, relative to men, women tend to exhibit a greater prevalence of depression, starting in late adolescence (Piccinelli and Wilkinson 2000), and employ distinct coping strategies (Nolen-Hoeksema 1995). Butler and Nolen-Hoeksema (1994, 333) summarize that "males are more likely to engage in active, distracting, or mastery-oriented responses to their depressed moods." This contrasts with women, who tend to be less active and instead ruminate over the causes and implications of their depression (Piccinelli and Wilkinson 2000, 489). Men will be more apt to react to depression by seeking out active control. This implies we may see stronger effects of depression in interaction with conspiratorial beliefs and/or a participatory inclination on support for violence among men, relative to women, especially if men, more so than women, view the means for regaining control-conspiratorial beliefs or a participatory inclination-as effective.

When it comes to gender differences in conspiracy beliefs, the evidence remains mixed (Douglas et al. 2019). That said, Cassese, Farhart, and Miller (2020) show that men are significantly more likely to hold conspiracy beliefs about COVID-19. They attribute this, partially, to greater learned helplessness that leads men to believe conspiracy theories, as such theories are notably useful to them to regain some sense of control. This suggests we will find a stronger relationship between depression interacting with conspiratorial beliefs and support for violence among men.

There is even more reason to anticipate such an amplified relationship when it comes to the leveraging impact of a participatory inclination. Bos and colleagues' (2022) theory of gendered socialization suggests children come to learn that politics is a masculine domain; they show that girls exhibit substantially less political interest and ambition than boys. This coheres with Fox and Lawless's (2014) classic study, showing a dramatic gender gap in political ambition among high school and college students. They find significantly more women view working for a charity as the best way to pursue change, whereas significantly more men view running for office as the best way to do so. Although participation gender gaps in the United States have diminished or vanished in the twenty-first century, women continue to be relatively less interested in politics, less likely to follow it, and more pessimistic about their ability to influence it (Schneider and Bos 2019; Wolak 2020). In short, a (political) participatory inclination is less likely to manifest as a mechanism of regaining control for women, compared to men. Our corollary, then, is that we expect to find stronger moderating effects of conspiratorial beliefs and (especially) participatory inclinations among men, relative to women, overall.

One brief clarification is that despite the rampant conspiratorial Republican and Trump rhetoric around the 2020 election, our predictions are orthogonal to partisanship and Trump support. Even in the 2020 election context, both sides emphasized extreme stakes, referencing the "soul of America" (Dias 2020). We will explicitly test this below.

## **Data and Methods** The COVID States Survey

To analyze the association of depression, conspiracy beliefs, and participatory inclinations with support for violence, we draw on data from a massive online panel survey that ran nearly monthly from 2020 to 2023. We invited respondents who completed the November 2020 wave (N = 19,766) around the 2020 presidential election to join a follow-up wave immediately after the January 6 insurrection (N = 2,044). We collected all predictors of interest in the November wave, thus avoiding the risk that

the insurrection itself influenced depression, conspiracy beliefs, or participatory inclinations. Some demographic information was already stored from earlier waves.<sup>5</sup> We recruited respondents through the PureSpectrum survey recruitment platform, which aggregates and deduplicates paid panelists from multiple online survey sources. Though not a probability sample, the large scale of the November wave and its demographic breadth allows considerable flexibility for including quotas for gender, race, and age at the state level and reweighting of observations to match official U.S. Census figures. Emerging evidence suggests this methodology can perform as well as traditional probability sampling (Enns and Rothschild 2021; Lehdonvirta et al. 2021; Radford et al. 2020). In the Supplemental Information (SI, p. 1), we offer survey implementation details.

#### Measures

In Table 1, we review our outcome measures as well as our central explanatory variables: depression, conspiratorial beliefs, and participatory inclinations. We offer more detailed rationales in the SI (pp. 1-3), elaborating on the four points discussed here. First, we employ multiple operationalizations of support for violence, including asking about the actual January 6 attack in our January 2021 wave, and support for hypothetical election violence in both our November 2020 and January 2021 waves.<sup>6</sup> Second, we measured participants' experiences with depression via the Patient Health Questionnaire (PHQ-9), a widely used tool to screen patients for depression in primary care settings (Arroll et al. 2010; Kroenke and Spitzer 2002). We use the scale as a continuous additive measure in the models; however, when generating predicted probabilities, we simulate respondents suffering from depression by setting the variable equal to the top decile and comparing them to respondents in the lowest decile. This has an advantageous substantive implication since the top decile cutoffs in both waves cross the clinical threshold for a diagnosis of severe depression (Kroenke and Spitzer 2002). Third, we used conspiracy belief items that matched the timing of our outcome measures (i.e., conspiracies that were widely circulating

<sup>5</sup>Sample sizes vary slightly by model due to occasional item nonresponse.

at the time of our data collection rather than older, longstanding ones such as the MMR vaccine causing autism). We do this to ensure specificity when exploring support for violence (Westwood et al. 2022).<sup>7</sup> We treat conspiratorial beliefs as continuous in our regressions. However, when generating predicted probabilities, we again simulate conspiratorial respondents by setting the variable equal to the top decile and comparing them to respondents in the lowest decile. Fourth, our participation measure gauged taking at least one of six relatively lowfrequency actions over the past 6 months (about 30% of respondents did so in both surveys). If the person has acted in the past, it suggests they may feel empowered to do so again. All question wordings and summary statistics appear in the SI (pp. 3–7).

#### Inferences

In making inferences, it is essential to clarify the hypothesized comparisons (Druckman 2022). Our predictions pinpoint the effects of the presence or absence of a moderating condition(s) in increasing a relationship between depression and support for political violence. Thus, for Hypothesis 1, we want to compare low conspiratorial beliefs with depression against high conspiratorial beliefs with depression; we expect the latter should be more strongly correlated with support for violence. Hypothesis 2 is the same but for participatory inclinations instead of conspiratorial beliefs, while Hypothesis 3 involves the presence of both conspiratorial beliefs and participatory inclinations for those who suffer from depression, as distinct from those who suffer from depression but only have one of the facilitative factors (conspiratorial beliefs or participatory inclinations). We will present some additional comparisons, but these are the ones that directly test our hypotheses.

We do not pursue experimental tests of our hypotheses given feasibility and ethical considerations.<sup>8</sup> We took several steps to ensure the strongest possible inferences. We measured our explanatory variables in the November wave prior to two of our outcome variables and thus exploit the panel data, followed our predictions by testing very specific interactive relationships, and confirmed that our precise interactive specifications had sufficient observations. We also ensured the interactive variables were

<sup>&</sup>lt;sup>6</sup>All three outcomes have relatively low means: the Support Capitol Riot, November Support Hypothetical Election Violence, and January Support Hypothetical Election Violence measures have respective means and standard deviations of (all on 0–1 scales) .14 (.24), .14 (.29), and .15 (.31). In the SI (pp. 5–6), we provide histograms of each outcome variable.

<sup>&</sup>lt;sup>7</sup>That said, those who hold conspiracy beliefs in one domain often hold them in another (Sutton and Douglas 2020, 118–19).

<sup>&</sup>lt;sup>8</sup>Although there are many experiments testing interventions to decrease depressive symptoms, it is more challenging and raises ethical concerns to employ a treatment that reliably decreases depression while withholding it from a control group.

| Dependent variables                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Support Capitol riot                    | "Did you support or oppose the storming of the Capitol building on January 6?" (5-point scale ranging from strongly oppose to strongly support)                                                                                                                                                                                                                                                                                                              |
|                                         | "We'd like to get your feelings towards different groups on a scale of 0 to 100, which we call a 'feeling thermometer.' How would you rate 'the people who stormed the Capitol building on January 6?'" (101-point scale ranging from most unfavorable/coldest to most favorable/warmest) <sup>§</sup>                                                                                                                                                       |
|                                         | The two above items were normalized on 0 to 1 scales and an average was taken ( $\alpha = .83$ ).                                                                                                                                                                                                                                                                                                                                                            |
| November hypothetical election violence | "If it became clear to you that the 2020 presidential election was not conducted fairly, would<br>you approve or disapprove of other people who reacted by using violence?" (Coded into three<br>categories of disapprove, neither approve nor disapprove, and approve)                                                                                                                                                                                      |
| January hypothetical election violence  | "If it became clear to you that the 2024 presidential election was not conducted fairly, would you approve or disapprove of other people who reacted by using violence?" (Coded into three categories of disapprove, neither approve nor disapprove, and approve)                                                                                                                                                                                            |
| Independent variables                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Depression                              | "Over the last two weeks, how often have you been bothered by any of the following problems?"                                                                                                                                                                                                                                                                                                                                                                |
|                                         | The list of problems includes a depressed mood; diminished interest in daily activities; significant weight loss or gain; sleep difficulties; slowing of thought and reduction of physical movement; fatigue; feelings of worthlessness or excessive guilt; diminished ability to concentrate or make decisions; and recurrent suicidal ideation. (4-point scale ranging from "not at all" (0) to "nearly every day" (3) and then summed to a 0 to 27 scale) |
| Conspiratorial beliefs                  | Respondents were asked about the accuracy of 12 statements about politics and the pandemic, with 10 of them false. (The measure counted the number about which they had incorrect beliefs (relative to the best available information at the time). <sup>§§</sup>                                                                                                                                                                                            |
|                                         | Example statements include "There is a cure for coronavirus that is being withheld from the U.S. public" and "Thousands of election ballots were found in dumpsters." The full list is in the SI (pp. 3–5).                                                                                                                                                                                                                                                  |
| Participatory<br>inclination            | Respondents reported whether they had participated in at least one of six political actions in the past 6 months.                                                                                                                                                                                                                                                                                                                                            |
|                                         | The activities included volunteering for a candidate, party, or political organization; attending a rally or protest; calling or writing an elected official; attending a town hall held by an elected official; posting about politics on social media; or making a political donation. $(0 = \text{none}; 1 = \text{one or more})$                                                                                                                         |

## TABLE 1 Dependent Variables and Central Independent Variables Used in Analyses

<sup>§</sup> The Capitol stormer feeling thermometer was embedded in a (feeling thermometer) list of unrelated individuals and groups (e.g., Asian people, scientists).

<sup>\$§</sup> Thus, a "don't know" response was not counted as belief in the statement (see Druckman et al. 2021).

not related nonlinearly, assessed several modeling strategies, conducted a host of robustness tests among subgroups (including based on partisanship and Trump support), and identified correlates of each of our explanatory variables, confirming that none are proxies for our focal variables. We additionally included many control variables measured in prior waves, including demographics (race, gender, age), socioeconomic status (education and household income), partisanship, ideology, Trump support (whether or not a respondent voted for/supported Trump in the 2020 election), use of Facebook for election news, and election confidence (level of confidence that the 2020 election was conducted fairly).<sup>9</sup> We use ordered logit models for the support for Hypothetical Election Violence items and ordinary least squares (OLS) for the Support Capitol Riot measure. Even with these steps, we present the results in terms of associations and correlations; results consistent with our hypotheses would constitute evidence on their behalf (Druckman 2022, 15–17).

#### **Condition Prevalence**

We predict increased support for violence when particular variables register higher scores. If these relationships hold, one can ask whether they envelop a meaningful share of the population. We address this by calculating the percentages in our sample that had either moderate or severe depression and one or both predicted moderators. For moderate depression, we employ a range of 5 to 14 on the PHQ-9 scale (which runs from 0 to 27); for severe depression, we use scores of 15 or greater (Kroenke and Spitzer 2002).<sup>10</sup> As mentioned, we will use the full continuous depression scale in our main analysis and focus on those in the highest decile in our main interpretations (i.e., above the minimum threshold for severe depression), although we also will briefly discuss results regarding moderate depression. In our samples, we therefore computed the percentages with moderate or severe depression and conspiratorial beliefs (top decile of such beliefs; 14% in our November data, 7% in our January data; Hypothesis 1); moderate or severe depression and a participatory inclination (20%, 14%; Hypothesis 2); and moderate or severe depression, conspiratorial beliefs, and a participatory inclination (5%, 4%; Hypothesis 3).<sup>11</sup> These percentages mean that a large number of people satisfy the conditions: 39% of our November sample and 25% of our January sample. Our bottom line is that the conditions involve a sizable number of people—roughly 64 million to 100 million people in the United States.<sup>12</sup> We will return to these numbers below in discussing the potential impact of decreasing the prevalence of depression.

#### Results

Throughout our empirical analyses, we employ Clarify simulations (King, Tomz, and Wittenberg 2000) to transform coefficients into probabilities or expected values, with confidence intervals. All simulated values we employ in deriving the reported results are in-sample. As mentioned, for presentational purposes (and due to length constraints), we primarily focus on the effects of depression in the top decile, which crosses the threshold for severe depression. However, in every instance, if we use a lower threshold that includes moderate depression (i.e., PHO-9 scores between 5 and 14; see note 10), the effects are entirely consistent statistically and substantively with what we report. We will return to the substantive impacts below. We report all statistical models (see Table A.3, SI pp. 8-9) and an explanation of interpreting interactions using Clarify in the SI (p. 7).<sup>13</sup>

Figure 1 presents the results of our tests of Hypotheses 1 and 2, offering strong support. The first panel, for Hypothesis 1 (based on Model 4 of Table A.3, SI pp. 8-9), presents probabilities of support for Hypothetical Election Violence for our November data. Recall that the relevant baseline is high depression in the absence of the facilitative condition. The Hypothesis 1 baseline of high depression and low conspiratorial beliefs shows a .03 probability of supporting Hypothetical Election Violence. As predicted, this dramatically jumps in the presence of high conspiratorial beliefs to .18-a statistically significant and substantively large increase. Of course, conspiratorial beliefs alone could be doing all the work, but, as we show in the figure, they are not; the probability of supporting violence in the case of conspiratorial beliefs and low depression is just .06, statistically significantly

<sup>&</sup>lt;sup>9</sup>Facebook election news is the sole control variable that was only available in the January wave.

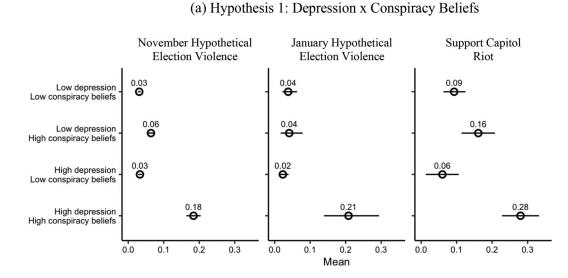
<sup>&</sup>lt;sup>10</sup>Our cutoffs for moderate and severe depression roughly match commonly used categorization schemes that label scores of 5–9 as mild, 10–14 as moderate, 15–19 as moderately severe, and 20 or above as severe. We include "mild" in our "moderate" category, as we are interested in those with any diagnosis and differentiating such cases from those with a severe diagnosis.

<sup>&</sup>lt;sup>11</sup>In computing these, the categories are exclusive (e.g., moderate or severe depression and conspiratorial beliefs only includes those without a high participatory inclination).

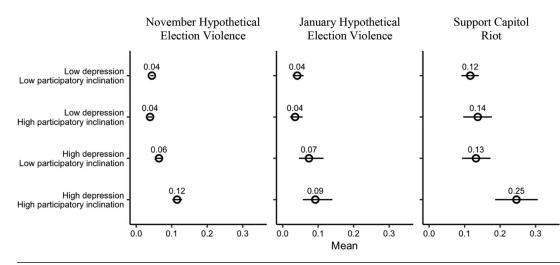
<sup>&</sup>lt;sup>12</sup>While these may be high numbers due to COVID-19, even in "normal" times, the numbers are nontrivial.

<sup>&</sup>lt;sup>13</sup>In using Clarify, we allowed for random selection of the seed values.

#### FIGURE 1 Relationship between Depression plus Conspiracy Beliefs and Depression plus Participatory Inclination with Support for Political Violence



(b) Hypothesis 2: Depression x Participatory Inclination



*Notes*: Data points represent the effects of varying depression and conspiracy beliefs from their 10th to 90th percentiles and, for participatory inclination, from its absence to its presence, with all other variables held constant at their mean values.

below the combined effect. The figures also show that the probability in the absence of both features is only .03. The intersection of the two variables matters for the relationship with support for violence. To our knowledge, this is the first documentation of how these two crucial societal phenomena (depression and conspiracy beliefs) relate to support for violence.

Turning to Hypothesis 2 with the same data (the first panel in the second row, based on Model 5 in Table A.3, SI pp. 8–9), we find that high depression without a participatory inclination leads to a .06 probability of

supporting violence. This doubles, again statistically significantly, to .12 given a participatory inclination. As before, it is not the inclination that drives the relationship; the probability of supporting violence absent depression but with a participatory inclination is only .04. The absence of both leads to the same probability of .04. Together, we thus find strong support for Hypotheses 1 and 2 with the Hypothetical Election Violence outcome for November.

It is worth noting that these are substantial changes: A typical respondent with severe depression and

conspiratorial beliefs is six times more likely to support violence than a depressed individual without conspiratorial beliefs (.03 vs. .18). The presence of a participatory inclination doubles the likelihood of supporting violence (.06 vs. .12). In both cases, the normalization of violence moves from what one might consider scant support to arguably noteworthy support.

The second panel in each row presents the results for Hypotheses 1 and 2, respectively, for the panel data from the January wave's Hypothetical Election Violence question. We again see clear support for Hypothesis 1 (Model 7 of Table A.3, SI pp. 8-9). The probability of supporting violence given high depression but low conspiratorial beliefs registers at only .02. This increases to .21 when conspiratorial beliefs manifest (a more than tenfold, statistically significant increase). Again, the finding does not stem from conspiratorial beliefs alone correlating with support for violence, as the probability of supporting Hypothetical Election Violence is only .04 absent depression. Support for Hypothesis 2 (Model 8 of Table A.3, SI pp. 8–9), however, is much less clear. The probabilities of supporting violence when a participatory inclination moves from absent to present among those who are depressed are .07 and .09, respectively. This coheres with our directional expectation, but it falls well short of statistical significance. That said, the .09 probability given severe depression and a participatory inclination is significantly greater than the .04 probability among those without depression but with a participatory inclination (and the .04 among those lacking both depression and a participatory inclination). This suggests some unique aspect of the intersection of the two, but it is not sufficient to support our hypothesis. We will, however, revisit these findings below when we investigate gender-specific effects.

We then test the hypotheses with our January Support Capitol Riot outcome, with the results reported in the last panels. We find strong support for both hypotheses. Specifically, consistent with Hypothesis 1 (Model 1 of Table A.3, SI pp. 8–9), a person with depression without conspiracy beliefs scores only a .06 on the 0–1 Support Capitol Riot scale; the corresponding score increases to .28 in the presence of conspiracy beliefs (a statistically significant, more than fourfold increase, equivalent to about 1.6 standard deviations; we use standard deviations for this outcome since, unlike the others, this scale is not based on percentages). Once again, the effect clearly does not arise from conspiracy beliefs or depression alone.

Further, we find clear support for Hypothesis 2 (Model 2 of Table A.3, SI pp. 8–9), as an individual suffering from depression without a participatory in-

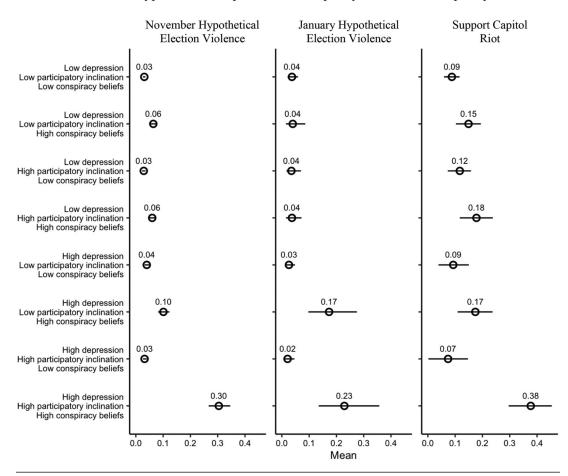
clination scores a .13 on the 0–1 Support Capitol Riot scale. This score nearly doubles—to a statistically significantly distinct .25 (an increase equivalent to .86 standard deviations)—given both depression and a participatory inclination. This also does not come about from a participatory inclination alone (that generates only a score of .14). In sum, we find strong and consistent support across our three measures for Hypothesis 1, and support in two of three cases for Hypothesis 2, with the exceptional case (January Hypothetical Election Violence) displaying directionally consistent results but falling clearly short of both statistical significance and a substantively notable difference.

Next, we turn to Hypothesis 3. We present these results in the three panels in Figure 2-showing, for each respective outcome variable, the probability of supporting election violence and scores on the Support Capitol Riot scale when all three conditions (severe depression, conspiratorial beliefs, and a participatory orientation) are met as well as all other combinations. Recall that we posited the relevant comparison to be the presence of both conspiratorial beliefs and a participatory inclination for those who suffer from depression against having high depression but lacking one of the two facilitative conditions. The first panel presents results for Hypothetical Election Violence in November (Model 6 in Table A.3, SI pp. 8-9) and provides stark support for Hypothesis 3. For those who suffer from depression and have a participatory inclination, but do not have conspiratorial beliefs, the probability of supporting Hypothetical Election Violence is only .03. The corresponding probability among those who are depressed and have conspiratorial beliefs but not a participatory inclination is .10. The probability increases to .30-a statistically significant and, respectively, tenfold and threefold increase-when severe depression and both facilitative conditions manifest. The panel also makes clear that any other combination falls far below the intersection of all three together, with the next closest probability being only .06.14

In the second panel, which presents results for Hypothetical Election Violence in January, we find partial support for Hypothesis 3 (Model 9 in Table A.3, SI pp. 8–9). Individuals with high scores on all three variables—depression, conspiratorial beliefs, and a participatory inclination—have a .23 probability of supporting violence, whereas those who are depressed and have a participatory inclination, but not conspiratorial beliefs,

<sup>&</sup>lt;sup>14</sup>These intermediate probabilities cannot be compared to those derived from two-way interactions between depression and conspiracy beliefs or participatory inclination since those models set the excluded variable to its mean value rather than assuming its absence, as in the three-way interaction models.

#### FIGURE 2 Relationship between Depression, Conspiracy Beliefs, and Participatory Inclination with Support for Political Violence



Hypothesis 3: Depression x Conspiracy Beliefs x Participatory Inclination

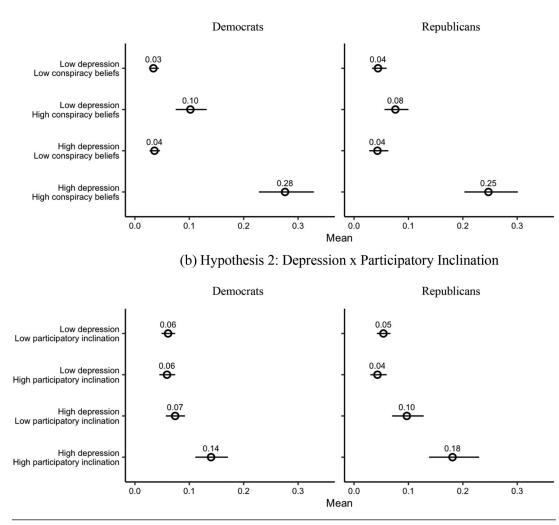
*Notes*: Data points represent the effects of varying depression and conspiracy beliefs from their 10th to 90th percentiles, and, for participatory inclination, from its absence to its presence, with all other variables held constant at their mean values.

have only a .02 probability. This represents a statistically significant, more than elevenfold difference. However, the probability of supporting violence among those suffering from depression who have conspiratorial beliefs is .17, which is not statistically distinct from .23. It is in the predicted direction, but the confidence intervals are large (reflecting low statistical power). Otherwise, we again see that any other combination falls far below the focal .23 probability. Overall, in this case, support for the hypothesis is mixed. Interestingly, this inconsistent evidence matches the one case for which we did not find clear statistical support for Hypothesis 2: the January Hypothetical Election Violence outcome and the interaction between depression and a participatory inclination. As mentioned, we will return to these cases below when we discuss gender differences.

Turning to the final panel and the Support Capitol Riot outcome, we find strong support for Hypothesis 3 across cases (Model 3 in Table A.3, SI pp. 8-9). The focal condition with the three attributes shows a score of .38 on the 0-1 Support Capitol Riot scale. In contrast, the corresponding score given depression and a participatory inclination, but absent conspiracy beliefs, is .07, and given depression and conspiracy beliefs, but absent a participatory inclination, is .17. These represent sizable, statistically significant, and greater than fivefold and twofold differences, respectively (and equivalent to 2.2 and 1.5 standard deviation differences, respectively). The figure also shows that every other combination falls well short-statistically and substantively-of the very high level of support for the events of January 6 among those with all three attributes.

#### FIGURE 3 Subgroup Results for Democrats and Republicans for November Hypothetical Election Violence (Two-Way Interactions)

(a) Hypothesis 1: Depression x Conspiracy Beliefs

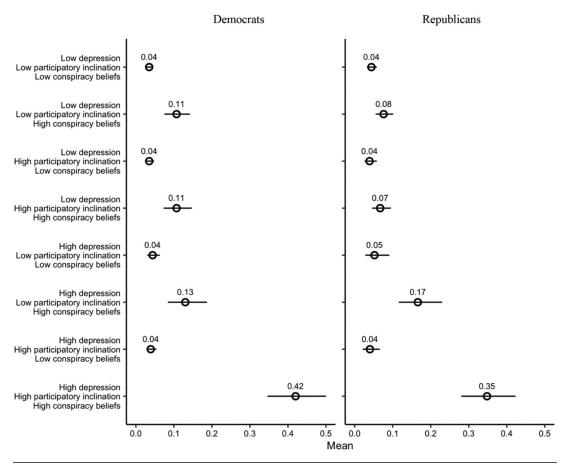


*Notes*: Data points represent the effects of varying depression and conspiracy beliefs from their 10th to 90th percentiles, and, for participatory inclination, from its absence to its presence, with all other variables held constant at their mean values.

In sum, we find support across all three of our outcome variables for Hypothesis 1; in the presence of conspiratorial beliefs, depression is associated with a much stronger correlation with support for violence (relative when conspiratorial beliefs are absent). We find support for two of the three outcomes regarding Hypothesis 2, which holds that a participatory inclination moderates the relationship between depression and support for violence (the exception being with the January Hypothetical Election Violence outcome). Finally, in five of the six tests, we find support for Hypothesis 3, which holds that the presence of both conspiracy beliefs and a participatory inclination prompts an especially strong relationship between depression and support for violence (relative to the absence of either condition). The one exception again concerns a participatory inclination in the case of January Hypothetical Election Violence.

Depression on its own clearly does not correlate with support for violence. Indeed, those who are depressed but lack the other attributes consistently score much lower than our overall average scores of around 8% or 9% support. This coheres with Landwehr and Ojeda's (2021) point that depression on its own can have a demobilizing effect. When joined with conspiratorial beliefs and/or a participatory inclination, however, depression prompts support for violence. The presence of conspiratorial beliefs has such an effect in all six tests, and, notably, conspiratorial beliefs without depression do not

#### FIGURE 4 Subgroup Results for Democrats and Republicans for November Hypothetical Election Violence (Three-Way Interactions)



Hypothesis 3: Depression x Conspiracy Beliefs x Participatory Inclination

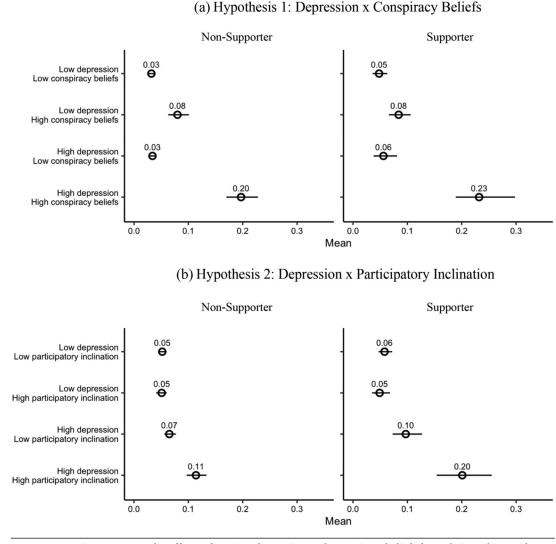
*Notes*: Data points represent the effects of varying depression and conspiracy beliefs from their 10th to 90th percentiles, and, for participatory inclination, from its absence to its presence, with all other variables held constant at their mean values.

register nearly the level of support for violence as when both conditions are present. We also find consistent, although perhaps somewhat less definitive, evidence regarding the effects of a participatory inclination. In every case, this exhibited a facilitative, frequently large in magnitude, effect in the predicted direction, although it fell short of statistical significance in two tests. We thus find clear statistical support in four of the six cases (regarding a participatory inclination) and directional support in all six cases.

The magnitudes and breadth of the associations stand out. We estimated 8% to 12% of the population was experiencing severe depression and held conspiratorial beliefs and/or a participatory inclination. If there is a causal connection, it would suggest a potentially very consequential intervention regarding support for political violence. For instance, in this case, if depression were reduced among individuals with conspiratorial beliefs and/or a participatory inclination, the decrease in supporting violence based on our Hypothetical Election Violence outcomes (expressed in terms of probabilities) averages 15 percentage points in November and 14 percentage points in January (see SI p. 14 for details on how we arrived at these estimates). That would be a notable return.

Moreover, recall that we presented our substantive interpretations based on the top decile of depression, which roughly represents severe depression. Yet, we find in every case that the results with moderate depression (i.e., moving from no depression to moderate depression) show statistically and substantively similar results. For instance, based on the regression models presented in the SI (pp. 10–13), using Clarify we find that, all else constant, the increase in support for violence as we

#### FIGURE 5 Subgroup Results for Trump Non-Supporters and Supporters for November Hypothetical Election Violence (Two-Way Interactions)



*Notes*: Data points represent the effects of varying depression and conspiracy beliefs from their 10th to 90th percentiles, and, for participatory inclination, from its absence to its presence, with all other variables held constant at their mean values.

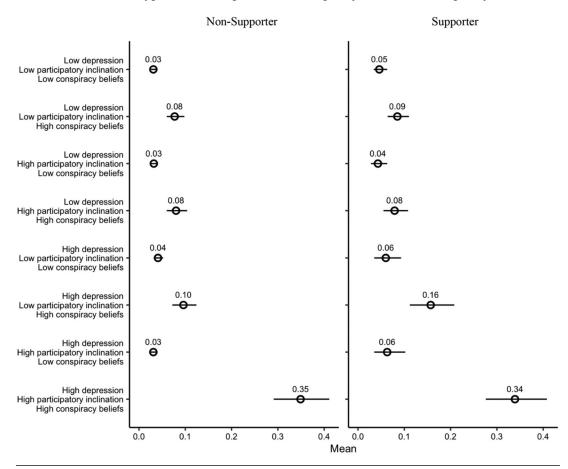
move from not depressed to moderately depressed, given conspiracy beliefs and a participatory inclination, is 8 and 17 percentage points, respectively, for Hypothetical Election Violence in November and Support Capitol Riot in January.

Thus—again, if there is a causal relationship ameliorating moderate depression would lead to a reduction in support for violence (across our outcome variables) by up to 17 percentage points. It also adds another 17–27% to the population of interest. Overall, our results suggest that a sizable portion of the population, 25–39%, would exhibit substantially less support for political violence, by up to 15 or 17 percentage points, if they were not depressed (see SI p. 14 for details on these estimates). In addition to the crucial individual and public health benefits of reducing depression, doing so could also help stabilize democracy by undermining the normalization of support for violence.

#### **Robustness Checks**

Although support for political violence generally tends to be symmetrical across the parties, there are exceptional times (Kalmoe and Mason 2022, 46–49). Additionally, conspiratorial beliefs tend to be symmetrical (Enders et al. 2022), but our COVID-19/election-focused

#### FIGURE 6 Subgroup Results for Trump Non-Supporters and Supporters for November Hypothetical Election Violence (Three-Way Interactions)



Hypothesis 3: Depression x Conspiracy Beliefs x Participatory Inclination

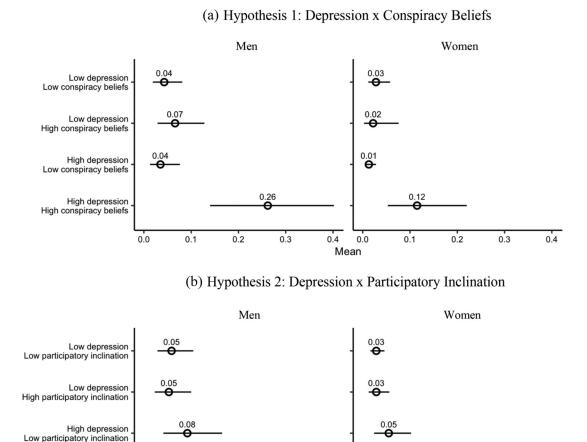
*Notes*: Data points represent the effects of varying depression and conspiracy beliefs from their 10th to 90th percentiles, and, for participatory inclination, from its absence to its presence, with all other variables held constant at their mean values.

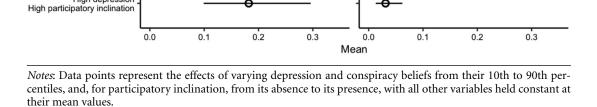
conspiracies have a Republican leaning. Indeed, President Trump was a clear purveyor of some of these theories (Bond and Neville-Shepard 2021). This all raises the question of whether the results are robust for Democrats and Republicans and for Trump supporters and non-supporters (i.e., are our results driven by Republicans responding to Trump?). We address this question by replicating our models for each of the four groups with our November data, where we have sufficient statistical power to look at three-way interactions among subgroups.

We present the results in Figures 3 and 4 for partisan subgroups and Figures 5 and 6 for Trump subgroups (drawn from Tables A.5 and A.6 for Democratic and Republican subgroups, respectively [SI pp. 14–16], and Tables A.7 and A.8 for Trump supporters and nonsupporters, respectively [SI pp. 16–18]). The figures show that the results clearly are robust across parties and Trump support. In every case, for each group, the results are significant at the .05 level or better. Our findings are not driven simply by Republicans or Trump supporters—depression is not standing in for a particular political orientation. Moreover, we did the same analyses for our two January outcome variables. Apart from the participatory inclination effect in the January Hypothetical Election Violence outcome (which is not significant in our main analyses), the results for all groups are significant or close to it. Indeed, in the few cases where a result falls short of .05 significance, it stems from low power, yielding large standard errors (see SI pp. 20-33).

These results give us substantial confidence that our analyses strongly support our hypotheses and are not driven by particular partisan subgroups.

#### FIGURE 7 Subgroup Results for Men and Women for January Hypothetical Election Violence (Two-Way Interactions)





0.18

Differential Responses by Gender

High depression

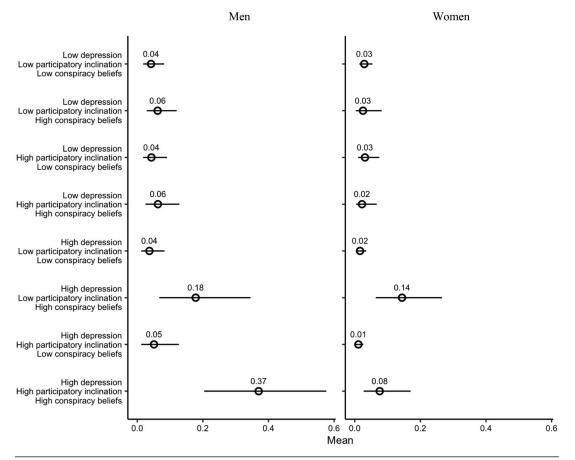
We offered a corollary that the effects of conspiratorial beliefs and, particularly, participatory inclinations might be stronger among men than women. We evaluate this possibility by rerunning every model separately for men and women. As expected, in nearly every case (for both conspiratorial beliefs and participatory inclinations), the relationships are larger in magnitude for men than for women, and in many instances, these differences are statistically significant.

Of particular note is that in the two cases where we did not find statistical evidence above—that is, regarding a participatory inclination with Hypotheses 2 and 3 on the January Hypothetical Election Violence outcome we find that the results *are* significant and large in magnitude for men but not for women. In Figure 7, we present these results for the January Hypothetical Election Violence outcome for men and women, respectively, for the two-way interactions; the top panel shows results with conspiracy beliefs and the second panel shows results for a participatory inclination (both for men and women). Figure 8 shows the results, for men and women, for the three-way interactions. (The figures are drawn from Tables A.9 and A.10 in the SI, pp. 18–21.)

We see clearly significant results for men, across all hypotheses (with each comparison point), whereas for women, the conspiratorial belief hypotheses but *not* the

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## FIGURE 8 Subgroup Results for Men and Women for January Hypothetical Election Violence (Three-Way Interactions)



Hypothesis 3: Depression x Conspiracy Beliefs x Participatory Inclination

*Notes*: Data points represent the effects of varying depression and conspiracy beliefs from their 10th to 90th percentiles, and, for participatory inclination, from its absence to its presence, with all other variables held constant at their mean values.

participatory inclinations hypotheses are consistent. For example, with regard to Hypothesis 2, among male respondents, the probability of supporting Hypothetical Election Violence in January given depression but not a participatory inclination is only .08. This probability more than doubles to a statistically distinct .18 given both high depression and a participatory inclination. For women, the respective values are statistically indistinguishable: .05 and .03. For Hypothesis 3, among male respondents, the probability of supporting Hypothetical Election Violence in January, given depression, conspiratorial beliefs, and a participatory inclination, is .37. This compares to .18 among male respondents with depression and conspiratorial beliefs without a participatory inclination, and .05 among male respondents with depression and a participatory inclination without conspiratorial beliefs. These are more than twofold and sevenfold (and statistically significant) differences in both cases. Among female respondents, the focal three-variable interaction generates a .08 probability, while the probability with no participatory inclination is .14 (higher but not statistically distinct from .08). Clearly, then, among men, but not among women, Hypothesis 3 regarding a participatory inclination holds. That said, the conspiratorial belief element of Hypothesis 3 holds for men and women, where the probability without conspiratorial beliefs is a much lower .01 for women (representing a sevenfold to eightfold difference).

It thus seems that a participatory inclination provides a consistent means to seek control and counter depression for men, leading to support for violence. This is not always the case for women; however, recall that in the other four tests with a participatory inclination, we *do* find significant or nearly significant effects for women, consistent with our hypotheses (and, of course, for men too). The participatory inclination outcome with regard to January Hypothetical Election Violence is the outlier for women (in terms of the lack of a relationship). The full results with all our data and outcomes show that while women demonstrate smaller effects than men, those effects are nonetheless consistently significant or approaching significance for all other outcomes (and variables; see SI pp. 34–39). The overall results offer robust support for all respondents and should not be read as only applicable to men.

## Conclusion

Depression reached unprecedented levels during the COVID-19 pandemic (Perlis et al. 2021). To the extent that depression has important associations with political attitudes or behaviors, this could have a profound impact on American politics going forward. The relative dearth of research by political scientists into the possible attitudinal or behavioral effects of depression makes it difficult to assess the likely nature or extent of any such relationships. We found clear evidence that those suffering from depression who hold conspiracy beliefs exhibit more support for political violence. This result holds with regard to support for Hypothetical Election Violence and support for the actual violence that took place on January 6 at the Capitol. We also found support for the proposition that participatory inclinations strengthen the relationship between depression and support for violence, always for men and nearly always for women. While our data come from a particular confluence of events-COVID-19, the 2020 election, and the January 6 insurrection-we suspect that the hypotheses generated from our theoretical framework generally hold and encourage further tests in other settings. This might include experimental tests that could, if ethically done, vary depression, conspiracy beliefs, and/or participatory inclinations.

It also would be useful to directly test the psychological processes we posit. For example, we suggest that the underlying psychological process involves people who suffer from depression seeking a sense of control. It would be useful to explicitly probe the role of control. Additionally, it will be important to explore the relative relationship with moderated depression versus other factors. We also encourage more work to explore distinct measures (e.g., other conspiracy beliefs). As explained, we are confident that our measures generalize. However, confirmation of our expectations is important to ensure external validity of the measures (Druckman 2022). We further find gender differences consistent with the types of patterns prior work suggests. But more work is needed to explore the gendered nature of violence (McDermott 2020).

We focused on depression because it is a prevalent mental health condition for which interventions can matter. Our results suggest that reducing depression could, if causally related, ameliorate support for violence among the severely depressed by roughly 14 or 15 percentage points among large percentages of the population (e.g., 8% or 12%). This leads to another question about the antecedents of depression, as it can stem from bipolar disorder, seasonal affective disorder, cyclothymic disorder, psychosocial factors, and so on. Understanding the origins is obviously crucial when discussing treatments. Of course, we cannot make definitive causal statements about the effects of interventions; more direct work is needed here, such as assessing whether interventions themselves impact support for violence given other conditions.

Furthermore, depression often correlates positively with conspiratorial beliefs (Jolley and Paterson 2020; Levinsson et al. 2021) and negatively with participation (Landwehr and Ojeda 2021; Ojeda 2015). Thus, if interventions to address depression were successful, it would concomitantly decrease one of the moderators while increasing another (both in salubrious directions). How this plays out is a crucial question for future work and one that would require over-time data that gauge all these factors, likely for a long period of time (e.g., looking at the life course of someone who suffers from depression at a given point). We view our study as a necessary step in setting the stage for such an effort. Regardless, our results add urgency to efforts to address mental health and conspiracy beliefs: Their mix has crucial, and potentially worrisome, democratic implications. They provide clarity into the relationship between mental health and support for violence insofar as we have identified conditions under which depression matters.

We emphasize, finally, that individuals suffering from depression are not themselves a risk to society. For one, depression on its own does not increase support for violence. Moreover, people with mental health disorders should be seen as suffering from illnesses not of their own making. We seek to highlight that policy makers and public health officials should prioritize a major policy response to the epidemic of depression, not only to limit the social and economic costs but also to mitigate the potential exacerbation of the crisis facing American democracy. The nation's democratic institutions were under great stress and confronting widespread skepticism even prior to the COVID-19 pandemic and the resulting wave of depression. Our data clearly suggest that by facilitating the legitimation of political violence, mass depression represents yet another potential crisis point for democracy, one we ignore at our peril.

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## **Supporting Information**

Additional supporting information may be found online in the Supporting Information section at the end of the article.

**Appendix A**. Survey Implementation **Appendix B**. Rationales for Measures

Appendix C. Question Wording
Appendix D. Histograms of Dependent Variables
Appendix E. Summary Statistics
Appendix F. Using *Clarify*Appendix G. Main Regression Models
Appendix H. Moderate Depression Results
Appendix I. Estimating Magnitudes
Appendix J. Robustness and Gender Analyses (for figures in the paper)
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Appendix M. References