

# A cognitive model of depression and political attitudes

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## ABSTRACT

Depression is among the most prevalent mental health problems. Previous research indicates that depressive symptoms and cognitive regulation processes are differentially associated with political attitudes. Here we build and test a model based on cognitive aspects of depression that provides an explanation for those differential associations. We test this formulation using a novel survey dataset that includes measures of worry and stress due to the COVID-19 pandemic, cognitive regulation processes, and depression. We posit that rumination mediates the association between depression and self-related political attitudes, whereas negativity bias mediates the association between depression and government-related attitudes. We find considerable support for these claims. Our findings elucidate how depression may influence people's perceptions of politics.

## 1. Introduction

Depression is one of the most common mental health difficulties, experienced by 280 million people around the world (WHO, 2023). As Gotlib and Joormann state, “[d]epression not only changes the way we feel, it also changes how we perceive ourselves and the world around us” (2010, p. 286). The goal of this paper is to test whether a cognitive model of depression helps us gain a better understanding of how depression is related to one's political perceptions and to how people perceive the political world.

Previous research, which we review below, has documented associations between political attitudes and both depression (Bernardi et al., 2023b; Bernardi and Gotlib, 2022; Bernardi and Johns, 2021; Ojeda et al., 2023) and cognitive regulation processes implicated in depression (Bernardi et al., 2023a). However, we still lack a framework to understand how depression relates to political attitudes. We combine insights from these studies with research on cognitive aspects of depression to provide such a framework, proposing and testing a cognitive model.

We posit that life stressors are associated with symptoms of depression which, in turn, are associated with political attitudes both directly and indirectly through cognitive factors. We test this formulation using a dataset from an online survey that was conducted in British adults in 2021. We use questions about stress in relation to the COVID-19 pandemic as stressors, validated measures of automatic rumination (brooding) and negativity biases to assess negative automatic thoughts,

and the short form of the Center for Epidemiologic Studies Depression Scale to measure depressive symptoms. We test our framework by conducting structural equation models on five different political attitudes: two related to the self (political attention and internal political efficacy) and three related to the government/political system (external political efficacy, satisfaction with the way the government handled the pandemic, and trust in government).

We report the following findings. First, we show that COVID-19 stressors are significantly correlated with depression (Step 1). Consistent with research on depression and cognitive factors, we then show that both brooding and negativity bias are also correlated with depression (Step 2). Next, we show that brooding is negatively correlated with internal political efficacy and that negativity bias in news selection is negatively correlated with political attention and all government-related attitudes (Step 3). We also show that depression is directly associated with external political efficacy and trust in government. Mediation analyses support these findings. Finally, we find that stressors due to COVID-19 are directly, but differentially, associated with political attitudes. Specifically, we document a negative association between COVID-19 worry and trust in and satisfaction with government, and a positive association between COVID-19 stress and political attention.

We compare our path model with an alternative model based on research examining cognitive aspects of depression. This research suggests not only that cognitive regulation processes will be reinforced by depression, but also that they act as a vulnerability for depression.

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Therefore, this alternative model suggests that life stressors will be associated with cognitive regulation processes that, in turn, will be associated with depression. Finally, depression will be associated with political attitudes. Although statistically this model was almost as strong as our original model, empirically it performed more poorly: we find that depression mediates the association between brooding and external political efficacy and trust in government.

Our paper makes three important, interdisciplinary contributions. First, by proposing and testing a framework of depression and political attitudes, our research provides a useful lens for understanding how depression may influence how people perceive politics, thereby advancing research on mental health and political behavior. Second, by proposing and testing a cognitive model of depression for politics, our paper extends cognitive theories of depression in psychological research, therefore providing novel applications of such theories outside psychology. Third, although we do not claim that our theory is specific to COVID-19 and stressors are not a central aspect of our cognitive model, our paper also contributes to our broader understanding of the political effects of the pandemic.

### 1.1. Theoretical framework

Fig. 1 depicts a simplified version of our theoretical model. As we explain below, consistent with cognitive theories of depression, we expect that stressors will be associated with depressive symptoms which, in turn, will be associated with political attitudes through rumination and cognitive biases.

### 1.2. Stress and depression

Most cognitive theories of depression propose diathesis-stress hypotheses that posit a link between a psychological vulnerability (e.g., certain cognitions or particular ways of processing information) and precipitating stressors (e.g., a negative life event or some other environmental factor) that together trigger the onset of depression (Gotlib and Joormann 2010, 286). The link between life stressors and depression is well established in the literature (for a review, see Hammen 2005). Particularly relevant for increased risk of depression are chronic stressors and events characterized by perceived lack of control, inability to escape or resolve the aversive situation, or loss of status (Brown and Harris 1978; Kendler et al., 2003; but see also Pizzagalli 2014, 406).

A number of cognitive theories of depression have incorporated stressors into their formulations. For instance, Beck's 1976 theory posits that schemas (or existing memory representations) lead individuals to filter stimuli from the environment such that their attention is directed toward information that is congruent with their schemas (Gotlib and Joormann 2010, 288). Because of this bias, depressed people attend selectively to negative stimuli in their environment and interpret neutral and ambiguous stimuli in a schema-congruent way (Gotlib and Joormann 2010, 288). When the dysfunctional schemas are activated by

stressors, specific negative cognitions are generated that take the form of automatic thoughts and revolve around pessimistic views about the self, the world, and the future – the negative cognitive triad (Gotlib and Joormann 2010, 289). Finally, Beck's cognitive specificity hypothesis posits that depressive schemas are likely to be activated by congruent life events, thereby initiating a vicious cycle of negative automatic thoughts, processing biases, and depressed mood (Gotlib and Joormann 2010, 289).

This view is consistent with other cognitive theories of depression. For example, based on Seligman's concept of learned helplessness, the helplessness/hopelessness model of depression (Abramson et al., 1978, 1989) posits that expectations of a lack of control over events lead to depressive symptoms (Joormann 2009, 300). Hopelessness can be defined as the expectation that highly desired outcomes will not occur or that highly aversive outcomes are certain. Thus, hopelessness is the consequence of attributing negative life events to stable and global causes. Where these causes are seen as lying within the individual (although still beyond his/her control), this erodes self-esteem and creates feelings of worthlessness, further exacerbating symptoms of depression. Numerous studies have reported associations among dysfunctional attitudes, attributional styles and other negative cognitions in depressed adults, adolescents and children (for reviews, see Dozois and Beck 2008; Joormann 2009; LeMoult and Gotlib 2019).

Although we cannot say exactly what kind of stressors are more prone to trigger depression, research in political science and political psychology has focused on “threats” or “worries” (Albertson and Gadarian, 2015) or “anxieties” (Brader, 2006; Marcus et al., 2000) as they influence political attitudes (and voting behavior). For example, this research points to threats like immigration, terrorism, public health or climate change to generate citizen anxiety. As we explain in greater detail below, in our study we follow this tradition and conceptualize worries and stresses due to the Coronavirus/COVID-19 pandemic as stressors.

Note that although the relationship between stress and depression has been demonstrated by decades of research (Hammen, 2005), cognitive theories of depression identify cognitive biases as a mechanism linking stressors and depression. Therefore, in our alternative model we test for an alternative first step, one between stressors and negative biases.

### 1.3. Depression and rumination

Our main model posits that depression is negatively associated with political attitudes via rumination and cognitive biases. This is at the core of our cognitive model. More specifically, we develop two broad hypotheses explaining the mechanisms. First, we expect that depression affects political attitudes through rumination for those attitudes related to the “self.” Second, we expect that depression affects political attitudes through cognitive biases for those attitudes related to the “other,” i.e., to political objects. We consider the first formulation in this section and the

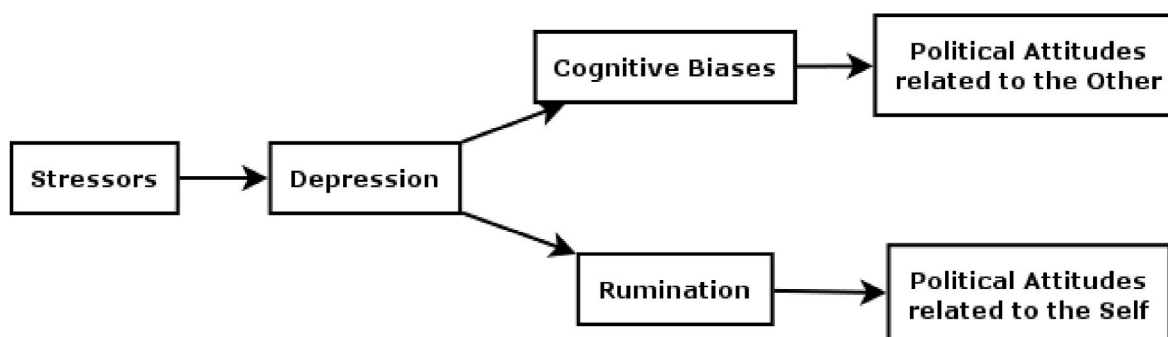


Fig. 1. A cognitive model of depression and political attitudes.

second formulation in the next section.

Previous cross-national research has found that individuals with higher depressive symptoms report lower interest in politics and lower internal political efficacy (Bernardi et al., 2023b; Ojeda et al., 2023). This research pinpointed rumination as a plausible mechanism. Subsequent research has evaluated the link between depressive rumination and different facets of political engagement more thoroughly and found that ruminating passively on one's emotional problems was associated with lower internal political efficacy and only marginally to lower attention paid to politics (Bernardi et al., 2023a).

There is now strong and consistent evidence that rumination, "a mode of responding to distress that involves repetitively and passively focusing of symptoms of distress and the possible causes and consequences of these symptoms" (Nolen-Hoeksema et al. 2008, 400), is a vulnerability factor for the development and maintenance of depressive episodes (LeMoult and Gotlib, 2019). As Nolen-Hoeksema et al. (2008, 401) have documented, people who engage in rumination when distressed have more prolonged episodes of depression and are more likely to develop depressive disorders.

Response styles theory (Nolen-Hoeksema, 1991) has related negative automatic thoughts to rumination. Nolen-Hoeksema et al. (2008) proposed that rumination involves an overall sense of certainty that situations in one's life are uncontrollable; these impressions of certainty and lack of control are posited to support the nonconscious function of rumination to avert the need to take responsibility in response to aversive situations (LeMoult and Gotlib, 2019).

Negative thinking (Lyubomirsky et al., 1999) and inhibition of instrumental behavior (Hertel, 2004) are at the core of the link between rumination and depression. On the one hand, rumination, through rehearsal of negative material, consumes cognitive resources and fixates attention on depressive symptoms. In effect, rumination leads depressed people to think more negatively about the past, the present, and the future, leading depressed people to experience difficulty inhibiting the processing of negative stimuli and expelling these stimuli from working memory (Joormann, 2005). On the other hand, rumination saps depressed "people's motivation and initiative" and leads them to believe that "they lack the efficacy and wherewithal to engage in constructive behavior, such as participation in mood-alleviating activities" (Nolen-Hoeksema et al. 2008, 403).

With this in mind, it is possible that the effect of depression on self-related political attitudes is mediated by rumination, which can guide attention to other spheres, including politics, and reinforce self-referential processing at the expense of a sense of self-efficacy, including political self-efficacy. However, the research examined above leaves room for an alternative path, one that goes from rumination to depression. In the alternative model that we test below we take this into account.

#### 1.4. Depression and cognitive biases

Rumination as an emotion regulation strategy is associated with cognitive biases in people with depressive symptoms (Joormann, 2010; Koster et al., 2011). As LeMoult and Gotlib explain, "difficulties disengaging attention from negative stimuli and controlling negative information in working memory are associated with higher levels of rumination" (2019, 60). Depression and risk for depression are characterized by the operation of negative biases, and often by a lack of positive biases, in self-referential processing, interpretation, attention, and memory. This proposition is supported by decades of research examining cognitive aspects of depression in at-risk, formerly, and currently depressed individuals (for a review see LeMoult and Gotlib 2019).

Self-referential processing is related to individuals' underlying negative cognitive schemas, as theorized by cognitive theories of depression (Beck, 1967). Biased self-referential processing has been conceptualized as reflecting the presence of negative self-schemas in depression. In addition, depressive mood is related to more frequent

negative thoughts, selective attention to negative stimuli, and greater accessibility of negative memories (Mathews and MacLeod, 2005). One of the core formulations of cognitive models of depression is that depressed individuals attend more strongly to negative than to positive or neutral information (LeMoult and Gotlib, 2019).

Given that depressed individuals exhibit negative biases in attention to, interpretation, and recall of information, we expect that such biases will apply to political information as well. Previous research from the UK has shown that those who report higher negative biases in attending to information from news headings exhibit lower levels of attention to politics, internal and external political efficacy, and trust in and satisfaction with government (Bernardi et al., 2023a). However, in the same country, depressive symptoms have been found to be associated only with lower external political efficacy and trust in and satisfaction with government in the context of the COVID-19 pandemic (Bernardi et al., 2023a; Bernardi and Gotlib, 2022). Evidence of the link between depression and external political efficacy from panel data in the UK substantiates these cross-sectional findings: depression was found to reduce external but not internal political efficacy (Bernardi et al., 2023b). The evidence so far suggests that depressed people exhibit a lower internal political efficacy, but the latter is not reduced by depression. Therefore, we believe that cognitive biases are more likely to play a stronger role in explaining the effect of depression on other-related than on self-related political attitudes. Having said so, we cannot completely rule out that, through negative biases, depressive symptoms will engender a sense of apathy and worthlessness of attending to politics and a sense of inadequacy of understanding and making sense of politics.

Although Fig. 1 depicts the core expectations from our cognitive model, the structural equation model that we built and present below accounts for other relevant paths. The statistical model evaluates the possibility that rumination acts as mediator for other-related attitudes and, vice versa, that cognitive biases act as mediator for self-related attitudes. It also includes a direct relation between depression and political attitudes. Indeed, feelings of apathy, lack of motivation or hopelessness about the future as captured by a depressive symptoms scale have been shown to be directly associated with external political efficacy and satisfaction with government (Bernardi and Gotlib, 2022). Moreover, given that cognitive biases and emotion regulation strategies may be interrelated, our statistical model takes this aspect into account. Finally, the model allows for the possibility that stressors are directly associated with political attitudes.

## 2. Method

### 2.1. Sample and study design

To test our cognitive theory of depression and political attitudes, we utilize an online survey that we conducted in Britain during the COVID-19 pandemic. We commissioned the survey, of a demographically and politically representative sample of the GB adult population (aged 18+), to the polling firm YouGov using their 'Political Omnibus' approach. The fieldwork of the survey took place in March 2021 (N = 1692). The initial sample was recruited from an online survey using active sampling based on quotas relating to age, gender, social grade, education, region, political attention and the 2016 EU Referendum and 2019 General Election votes. The quotas were based on ONS mid-year estimates, the Census, Election and Referendum Results, and the British Election Study face-to-face study.

YouGov does not rely on consent but on legitimate interests for processing panelist data. When an individual joins YouGov, they are asked to agree to their terms and conditions and are offered the chance to read their privacy and cookies notice. Before starting the survey, participants were shown a short text briefing them about the nature of the study and the approximate duration of the survey. The data were fully anonymized after the fieldwork and an individual ID number was

created. We submitted an ethics application for our study that received ethical approval on July 13, 2020 by the School of Histories, Languages and Cultures Ethics Committee of the University of Liverpool (reference number 7774).

### 3. Operationalization

#### 3.1. Stress

Our survey questionnaire includes several questions about factors relating the COVID-19 pandemic that might have generated worry and stress among citizens. Because our survey was fielded in March when the pandemic was no longer an external shock and UK citizens, like many other citizens around the world, had already experienced a national lockdown, we asked questions about feelings towards the pandemic that reflected enduring worries and stress. Response options range from 1 (very worried/stressed) to 4 (not at all worried/stressed). We recoded the variables so that higher values denote higher worry/stress. Specifically, we asked respondents whether they were worried that they would become seriously unwell or die (Mean = 2.30, SD = 0.90) and whether they had the same feelings for their family and friends (Mean = 2.72, SD = 0.87); whether they were worried about their finances (Mean = 2.34, SD = 0.93); and about the long-lasting, negative effects of the pandemic (Mean = 2.97, SD = 0.80). We also asked respondents whether they were stressed about restrictions on leaving their home (Mean = 2.47, SD = 0.97), reduction in contacts with people outside their household (Mean = 2.71, SD = 1.00), and wearing a face mask in public spaces (Mean = 1.96, SD = 1.03). Questions and response options are reported in [Appendix A](#). Factor analysis supports a two-factor solution ([Appendix E](#) presents the scree plot of eigenvalues of COVID-19 stressors). Whereas feelings of worry are related more strongly to people's fear and anxiety around COVID-19, stress is related more strongly to people's perceptions of anti-pandemic measures.

#### 3.2. Depression

Depression is measured with the 9-item form of the Center for Epidemiologic Depression Study (CESD-9) ([Radloff, 1977](#)). The scale was designed to measure depressive symptoms in population samples. Respondents were asked about their feelings in the past two weeks on the following items: "I felt depressed"; "I felt that everything I did was an effort"; "I felt hopeful about the future"; "my sleep was restless"; "I was happy"; "I felt lonely"; "I enjoyed life"; "I felt sad"; "I could not get going". Response options range from 1 (rarely or none of the time) to 4 (most or all of the time). We note that in Britain the mean value of depressive symptoms doubled in the past five years, probably also due to COVID-19 effects.

#### 3.3. Rumination

To measure negative repetitive thinking we used the five-item brooding rumination subscale derived from Nolen-Hoeksema's Ruminative Response Styles Scale ([Nolen-Hoeksema and Morrow, 1991](#)). Brooding rumination is defined as passive and judgmental thoughts about one's mood ([Treyner et al., 2003](#)) and has been found to be strongly associated with depressive symptoms ([Burwell and Shirk, 2007](#); [Lopez et al., 2009](#)). The brooding rumination subscale asks respondents to state how often they think the following when they feel down, sad or depressed: think "Why do I always react this way?"; think about a certain situation, wishing it had gone better; think "Why do I have problems other people don't have?"; think "Why can't I handle things better?"; think "What am I doing to deserve this?".

#### 3.4. Cognitive biases

We wanted to use a measure of negativity bias that is not strictly

political and is exogenous to COVID-19. Therefore, we used a measure of negativity biases in news selection (NBNS) developed by [Bachleda et al. \(2020\)](#). As [Bachleda et al.](#) note, an advantage of this measure is that, unlike other self-reported or lab-based measures of negativity bias, it is suitable for use in online surveys. Consistent with the authors' method, we used a question repeated for each of five topics: "Imagine that you are going to read a news story in order to learn something interesting, important or useful about the [economy/environment/health care/-politics/foreign affairs]. You have four headlines from which to make one selection. Which of the following would you read?" Respondents are then given four headlines, and they select one. Following the authors, we randomized both topics and headlines. The headline groupings always included two positive headlines and two negative headlines. We used exactly the same headlines except for the politics headlines which we adapted to refer to British politics (headlines are reported in [Appendix B](#)).

#### 3.5. Political attitudes

Our questionnaire includes a number of questions on political attitudes relative to the self and the others (i.e. the government and the political system). We use the same set of political outcomes used by the research on depression and cognitive regulation processes that we have reviewed above so that we can directly compare our findings with previous research to make a stronger contribution to the literature. We operationalized political attitudes related to the self as political attention and internal political efficacy. Interest in politics is "typically the most powerful predictor of political behaviors that make democracy work" ([Prior 2010](#), 747) and is strongly related to political knowledge and participation ([Delli Carpini and Keeter, 1996](#); [Verba et al., 1995](#)). To measure political interest, we used a 0–10 scale question that YouGov had previously asked their panelists: "How much attention do you generally pay to politics?", where 0 indicates "pay no attention and 10 indicates "pay a great deal of attention" (mean = 5.60, SD = 2.69).

The concept of internal political efficacy denotes citizens' perceptions of their ability to understand and to participate effectively in politics ([Craig et al., 1990](#)) and originates from the psychological concept of self-efficacy ([Bandura et al., 1999](#)). We operationalized internal political efficacy by asking respondents to indicate the extent to which they agreed with two questions ("I think I understand quite well the most important political issue that affect the country" and "Sometimes politics seems so complicated to me that I can't understand what's going on"), where the response options were: 1 "strongly disagree", 2 "somewhat disagree", 3 "neither agree nor disagree", 4 "somewhat agree", and 5 "strongly agree."

To measure political attitudes related to the others, we focused on the government and the political system in general and relied on three widely used concepts in political science: external political efficacy, satisfaction with the government (on COVID-19), and trust in government. External political efficacy also has psychological roots in the notion of locus of control, namely the sense of being in control of one's own life rather than feeling powerless in the face of external forces ([Levy, 2013](#); [Renshon, 1974](#)). To measure perceptions of how responsive political institutions and actors are in reacting to citizens' demands ([Morrell, 2003](#)) we used two questions ("Public officials don't care much about what people like me think" and "The political system allows people like me to influence what the government does") that have the same range as the questions about internal political efficacy.

The constructs of political trust and satisfaction are related to [Easton's \(1975\)](#) support of the output of government. As [Mattila and Rapeli \(2018, 117\)](#) suggest, the idea of an implicit psychological-democratic contract ([Wroe, 2014](#)) is at the basis of the connection between personal health and political trust, but also performance. We wanted to assess specific levels of political support, involving evaluations of regime performance and confidence in regime institutions ([Norris, 2011](#)), on which the impact of the COVID-19 pandemic is likely to be stronger,

unlike more diffuse levels like support for regime principles (Bol et al., 2020). Thus, we asked a 0–10 scale question about trust in government (0 = not at all, 10 = completely) (Mean = 5.20, SD = 2.78) and a question about government performance on the pandemic (“How well or badly do you think the UK Government are handling the issue of the Coronavirus (COVID-19)?” where 1 “very well”, 2 “fairly well”, 3 “fairly badly”, and 4 “very badly”) (Mean = 2.35, SD = 0.94). Summary statistics of all variables are presented in [Appendix C](#).

### 3.6. Modeling strategies

To test the sequential model depicted in [Fig. 1](#), we use structural equation modeling (SEM). The SEM model includes a measurement model and a structural model. In the measurement model, six latent factors are estimated based on their indicators (i.e., the items of the questionnaires): COVID-19 worry, COVID-19 stress, depression, brooding rumination, internal political efficacy and external political efficacy. Albeit computationally more complex than summing the questionnaire items, this approach produces more accurate results by reducing measurement error. Furthermore, the use of latent factors allows us to calculate reliability indexes for the employed questionnaires. The structural model includes all the regressions necessary to calculate both direct and mediated effects on the six latent variables, including the potential effects of the control variables. Because political attitudes are intercorrelated, we estimate all system of equations simultaneously. In addition to the association depicted in [Fig. 1](#), our model accounts for the associations between other sequential variables. That is, our model allows COVID-19 worry and stress factors to correlate with cognitive regulation processes and with political attitudes. Our model also tests for the correlation between depression and political attitudes and, given the association between emotion regulation strategies and cognitive biases, our model allows the errors in the two cognitive factors to correlate.

Although we build on cognitive models of depression (LeMoult and Gotlib, 2019) to motivate the identification of causal mechanisms, and although our study design based on survey data is appropriate to answer our research question, relying on observational data makes it challenging to test causal effects. Specifically, methodologists have drawn attention to the sequential ignorability assumption (Imai et al., 2010). Under this assumption, “given the observed pretreatment confounders, the treatment assignment is assumed to be ignorable, that is, statistically independent of potential outcomes and potential mediators” (Imai et al., p. 312). While this part of the assumption in experimental work is met because the treatment is assigned, that is not the case in observational studies. In our case, the treatment (depression) is not randomly assigned. As Imai and colleagues argue, a common strategy to address this problem is to obtain as many pretreatment confounders as possible.

Therefore, in our analyses we control for a large number of socio-demographic variables. Following recent research on the effect of COVID-19 on mental health (O’Connor et al., 2021) and on socioeconomic determinants of depression (Rai et al., 2013), in the mental health paths we controlled for sex (1 = male, 2 = female), age (min = 18, max = 89), education (low, medium, high), employment status (1 = paid employment; 2 = unemployed/not paid employment; 3 = student; 4 = pensioner), marital status (1 = single or never married; 2 = married, living as married, civil partnership; 3 = separated or divorced; 4 = widowed), ethnicity (1 = English, Welsh, Scottish, Northern Irish, 0 = otherwise), and region (1 = North, 2 = Midlands, 3 = London and South, 4 = Wales, 5 = Scotland). In the political attitudes path, we followed recent research on COVID-19 and political support (Bol et al., 2020) and also controlled for past behavior by controlling for both turnout (1 = voted, 0 = did not vote) and vote choice (1 = Conservative Party, 2 = Labour Party, 3 = LibDem, 4 = others) in the 2019 general elections. We recoded our categorical variables into a series of dichotomous variables.

The sequential ignorability assumption also assumes that the mediator is ignorable, that is, assigned statistically independent of outcomes and potential mediators (Imai et al., 2010). As Imai and colleagues warn,

this part of the sequential ignorability assumption is harder to satisfy because it is “always possible that there might be unobserved variables that confound the relationship between the outcome and the mediator variables even after conditioning on the observed treatment status and the observed covariates” (p. 313). Consistent with cognitive models of depression, we addressed this issue by including a second mediator through which the effect of depression may operate. A similar strategy has been adopted in research on the influence of the media cue on immigration attitudes (Brader et al., 2008). Imai et al. (2011) warn further that the sequential ignorability assumption is not satisfied when the two mediators are causally related. Research on the cognitive aspects of depression has only recently started to investigate the association between cognitive biases and emotion regulation strategies; however, to our knowledge, no causal claim has been advanced to date (LeMoult and Gotlib, 2019) and there is no evidence of a direct causal connection between the two mechanisms. However, since we cannot be completely sure of the absence of a causal relationship, our SEM estimates the errors between rumination and cognitive biases.

In sum, although the likelihood of excluding variables in the causal chain between depression and political attitudes is low, given the causal identification challenges examined above, we are cautious in how we interpret our findings knowing that, despite our approach, causal effects are very difficult to claim with these data.

## 4. Results

The reliability of the latent factors was estimated with the *compRelSEM* function of the *semTools* R package. The function was applied to a CFA including only a measurement model (i.e., no regressions). The details are reported in the Supplemental Materials. The reliability of the six latent factors was satisfactory. The omegas indexes were 0.701, 0.77, 0.89, 0.869, 0.722, 0.612 for COVID-19 worry, COVID-19 stress, depression, brooding, internal political efficacy, and external political efficacy, respectively. Therefore, the latent factors were deemed to be reliable proxies for the constructs of interest. The model’s goodness of fit was evaluated with standard indexes such as the robust variants of the RMSEA and CFI, and the SRMR. Our model exhibited a satisfactory goodness of fit ([Table 1](#), first row).

[Fig. 2](#) reports the standard coefficients (std.lv) and level of significance of all the associations tested in our model that are statistically significant. However, the full set of results (based on the models with and without controls) is reported in [Appendix D](#), with the related R syntax available in [Appendix F](#). Here, we first focus on those associations that are of primary interest to the model depicted in [Fig. 1](#).

Our theoretical framework predicts a positive and significant relation between stressors and depression. We find support for the first step of our model: there are positive and significant associations between COVID-19 worry, +0.32 ( $p < 0.001$ ), and stress, +0.36 ( $p < 0.001$ ), and depression symptoms.

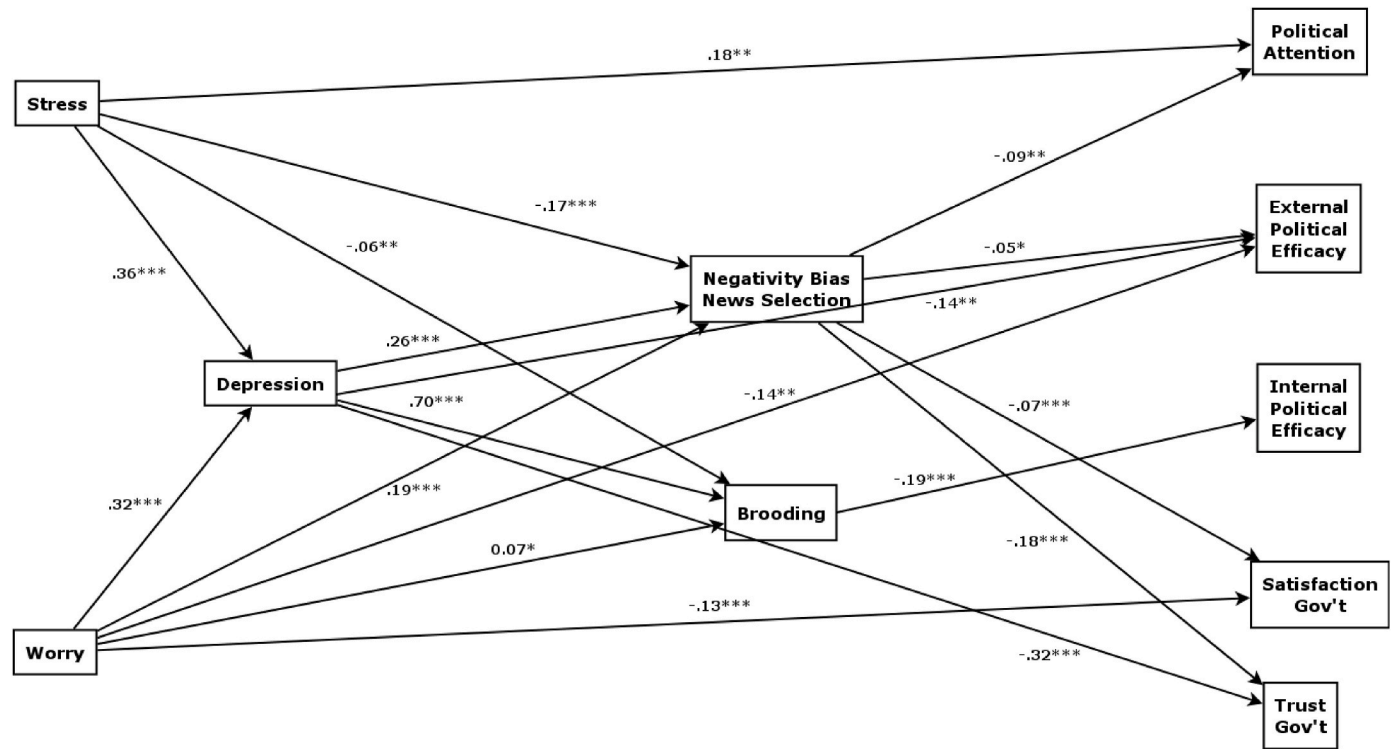
The second step of our model predicts an association between depression and cognitive regulation processes, measured as brooding and NBNS. Consistent with our expectations, there is a positive and significant relation between depression and brooding (+0.70,  $p < 0.001$ ) and between depression and NBNS (+0.26,  $p < 0.001$ ). These effects are consistent with findings from studies that have documented that depressed individuals use rumination as a maladaptive emotion regulation strategy and have a negative bias in attention.

The third step is that between cognitive regulation processes and political attitudes. On the one hand, our path model shows a (statistically non-significant) association between brooding and political attention (−0.13) and a significant path between brooding and internal political efficacy (−0.19,  $p < 0.001$ ) in the expected direction. On the other hand, NBNS is negatively associated with political attention (−0.09,  $p < 0.05$ ) and all three government-related attitudes: external political efficacy (−0.05,  $p < 0.05$ ), trust in government (−0.18,  $p < 0.001$ ), and satisfaction with the way the government handled the

**Table 1**  
Model's goodness of fit.

Model	Chi2 scaled	Degrees of freedom scaled	Robust RMSEA	Robust CFI	SRMR	AIC	BIC
Main model	2362.985	743	0.038	0.919	0.038	112864.6	114323.8
Alternative model	2444.165	745	0.039	0.915	0.040	112946.0	114394.4

Note: RMSEA = root mean square error of approximation; CFI = comparative fit index; SRMR = standardized root mean squared; AIC = Akaike information criterion; BIC = Bayesian information criterion.



**Fig. 2.** Direct effects of main model. Note: only standardized coefficients that are statistically significant are displayed. For the full set of results see [Appendix F](#). \*\*\* $p < 0.01$ ; \*\* $p < 0.05$ ; \* $p < 0.10$ .

pandemic ( $-0.07, p < 0.001$ ).

Our structural equation model also yielded a direct association between depression and external political efficacy ( $-0.14, p < 0.05$ ) and between depression and trust in government ( $-0.32, p < 0.01$ ). Moreover, we document a negative relation between COVID-19 worry and two government-related attitudes (external political efficacy:  $0.14, p < 0.05$ ; government satisfaction on the pandemic:  $0.13, p < 0.001$ ), while COVID-19 stress is positively associated with political attention ( $+0.18, p < 0.05$ ). Finally, we document a significant path between COVID-19 worry and brooding ( $+0.07, p < 0.10$ ) and NBNS ( $+0.19, p < 0.001$ ), suggesting that the pandemic contributes to negative self-referential processing and negative biases in attention. We also document a significant path, but in the opposite direction, between COVID-19 stress and brooding ( $-0.06, p < 0.05$ ) and NBNS ( $-0.17, p < 0.001$ ).

#### 4.1. Cognitive regulation processes as mediators of the association between depression and political attitudes

Findings from our structural equation model suggest a significant pathway through NBNS (on political attention, external efficacy, satisfaction, and trust) and brooding (on internal efficacy), and also confirm a direct association between depressive symptoms and some government-related attitudes. Our theoretical model predicts that cognitive regulation processes mediate the association between depression and political attitudes, with brooding rumination more likely to play a role for self-related attitudes, whereas cognitive biases more

likely to be involved in other-related attitudes. Thus, to increase our confidence that cognitive regulation processes are significant mediators, in [Table 2](#) we investigate the extent of the association between depression and political attitudes that goes through cognitive regulation processes.

The indirect effects are small, but they do support the analyses presented above. Brooding mediates the relation between depression and internal political efficacy ( $-0.13, p < 0.001$ ), while NBNS mediates the relation between depression and government-related attitudes (external political efficacy:  $0.01, p < 0.10$ ; satisfaction with government on the pandemic:  $0.02, p < 0.01$ ; and trust in government:  $0.05, p < 0.01$ ) and between depression and political attention ( $-0.02, p < 0.05$ ).

#### 4.2. An alternative cognitive model of depression

Although the goal of our paper was to explain how depression might be associated with different political attitudes – hence our path model using cognitive regulation processes as the intermediate step between depression and political attitudes –, it is plausible that other path models may provide valuable insights on the topic. In particular, we focus our attention on one alternative path model supported by theoretical and empirical research on cognitive aspects of depression reviewed above. This research makes two important points. One is that cognitive biases and emotion regulation strategies are major risk factors for depression. The other is that depressive schemas, which can be latent, are likely to be activated by life stressors. These intuitions suggest that stress is

**Table 2**  
Indirect effects of cognitive regulation processes.

Mediation effect	estimate	standard error	Z score	p value	standardized lavaan
depression → brooding → political attention	−0.070	0.057	−1.221	0.222	−0.087
depression → NBNS → political attention	−0.019	0.009	−2.090	0.037	−0.024
depression → brooding → internal political efficacy	−0.125	0.038	−3.330	0.001	−0.130
depression → NBNS → internal political efficacy	−0.007	0.006	−1.187	0.235	−0.007
depression → brooding → external political efficacy	−0.014	0.036	−0.402	0.688	−0.016
depression → NBNS → external political efficacy	−0.011	0.006	−1.757	0.079	−0.012
depression → brooding → trust in gov't	0.025	0.063	0.393	0.694	0.031
depression → NBNS → trust in gov't	−0.037	0.012	−2.962	0.003	−0.046
depression → brooding → gov't satisfaction	0.033	0.021	1.618	0.106	0.042
depression → NBNS → gov't satisfaction	−0.013	0.004	−3.092	0.002	−0.017

associated with cognitive regulation processes (*Alternative Step 1*); cognitive regulation processes are associated with symptoms of depression (*Alternative Step 2*); and symptoms of depression are associated with political attitudes (*Alternative Step 3*). As for the main model, the full set of results from the alternative model is reported in [Appendix D](#), with the related R syntax available in [Appendix F](#).

First, we see that the model performs more poorly on almost all goodness of fit indices ([Table 1](#) second row). Second, we evaluate whether depression mediates the relation between cognitive regulation processes and political attitudes. The results are presented in [Table 3](#); there is support for this formulation only in two instances. Depression mediates the association between brooding and external political efficacy ( $-0.06, p < 0.001$ ) and between brooding and trust ( $-0.13, p < 0.001$ ). Although these findings should not be dismissed and may offer further insights on the link between cognitive aspects of depression and government-related attitudes, our data overall provide greater support for the main model.

## 5. Discussion and conclusion

In this paper we advance a theoretical model to understand how depression may influence political attitudes. Based on cognitive theories of depression, we posit that depression, activated by stressors, can influence political attitudes directly and indirectly through two main cognitive factors: cognitive biases and emotion regulation strategies ([LeMoult and Gotlib, 2019](#)). Political scientists and psychologists have

**Table 3**  
Indirect effects of depression.

Mediation effect	estimate	standard error	Z score	p value	Standardized lavaan
brooding → depression → political attention	−0.003	0.040	−0.075	0.940	−0.004
NBNS → depression → political attention	0.000	0.001	0.074	0.941	0.000
brooding → depression → internal political efficacy	0.009	0.025	0.361	0.718	0.009
NBNS → depression → internal political efficacy	0.000	0.001	−0.337	0.736	0.000
brooding → depression → external political efficacy	−0.053	0.026	−2.051	0.040	−0.057
NBNS → depression → external political efficacy	0.002	0.002	0.784	0.433	0.002
brooding → depression → trust in gov't	−0.112	0.045	−2.483	0.013	−0.134
NBNS → depression → trust in gov't	0.004	0.005	0.795	0.427	0.004
brooding → depression → gov't satisfaction	−0.019	0.015	−1.298	0.194	−0.023
NBNS → depression → gov't satisfaction	0.001	0.001	0.713	0.476	0.001

recently begun to incorporate these concepts into their work to analyze political outcomes ([Ford et al., 2019](#); [Ford and Feinberg, 2020](#); [Soroka, 2014](#)); in this paper we are the first to provide and test a model integrating depression and political attitudes.

We report evidence of a direct association between depression and government-related attitudes and support the formulations about the role that negativity bias and maladaptive coping strategies may play in understanding how depression affects people's perceptions of politics. In this context, our findings suggest that whereas coping strategies like rumination are useful in explaining how depression influences political attitudes like internal political efficacy that are self-related, negativity bias seems to be more useful in understanding how depression affects other-related attitudes like external political efficacy and satisfaction with and trust in the government.

Our finding of the mediating role of negativity raises the question of whether depressed people are negatively biased or whether there is room for an alternative interpretation, one suggesting that depressed people hold a more realistic view of politics. This suggestion is consistent with research on depression realism. For instance, [Alloy and Abramson \(1979\)](#) posited that depressed individuals are “sadder but wiser” than are nondepressed individuals. They observed that nondepressed individuals exhibited cognitive biases that facilitated positive interpretations of themselves and the world, whereas depressed persons maintained a realistic, albeit negative, perspective that likely contributed to their negative mood. Similarly, research by Weary and

colleagues on impression formation provides support for the notion that mildly depressed individuals are more likely to engage in a piecemeal style of social information processing (Edwards and Weary, 1993; Gleicher and Weary, 1991; von Helversen et al., 2011). Other work on affect effects reports that people in negative emotional states or moods engage in more systematic processing, whereas people in positive emotional states or moods engage in more heuristic processing (Forgas, 1998; Mackie and Worth, 1991; Schwarz, 2012). Future research should assess the extent to which evidence from depression realism and information processing applies to political-based information.

Not only does our study point towards interesting research avenues on other cognitive domains, but it also provides fertile theoretical ground for understanding the depression-voting gap that has been identified in previous studies (Landwehr and Ojeda, 2021). It is well known that political attitudes such as those analyzed here predict political engagement (Almond and Verba, 1963; Pateman, 1970). Our findings suggest that depressive symptoms, in combination with rumination and negativity bias, may influence political attitudes. Thus, our theory provides a more complete account of why people with depression may participate less in politics. By focusing on political efficacy, satisfaction, and trust, we suggest that a plausible cure for lack of political engagement can develop via strengthening core political orientations. Therefore, our theory goes beyond COVID-19. Although we examined pandemic-related stressors, our questions – such as worry about your life or the death of family members and friends but also worry about personal financial situations – address stress factors that people may experience in “normal” circumstances as well. Of course, it can still be the case that other stress factors that were not examined triggered depression in some of our respondents. However, our findings do not appear to be driven by specific stress questions, which increases our confidence that our results are generalizable beyond COVID-19.

We should note three limitations of our study. First, although our research identifies some psychological mechanisms through which depression can influence how people perceive politics, other factors are likely to also be involved. For instance, due to lack of data, we did not theorize or test for the indirect effect of other coping strategies, like suppression, that are related to depression, nor did we test for cognitive biases in domains other than attention. Similarly, there are risk factors associated with depression in addition to perceived stressors and cognitive vulnerabilities that future research should take into account.

Second, our analyses are based on observational data and, therefore, we have been very careful at omitting any causal claim when interpreting our results. Future research needs to test whether the associations we have identified here are causally related. Standing on the giants’ shoulders of cognitive theorists of depression, we have good reasons to believe that they are. Yet we also know that reverse causality cannot be excluded. Although our data cannot provide a satisfactory test for reverse causality, by building on the literature examining cognitive aspects of depression we have presented and tested an alternative model. Rumination has been posited to be a major risk factor for the onset and maintenance of depression (Nolen-Hoeksema et al., 2008), but although rumination has been conceptualized as a habit of thought, theoretical work does not exclude the possibility that the causal arrow can go from symptoms of depression to rumination (LeMoult and Gotlib, 2019). The same possibility is allowed for the link between depression and cognitive biases. We also cannot exclude reciprocal effects between political outcomes and depression, whereby decreased levels of political efficacy, trust, and satisfaction in turn exacerbate symptoms of depression. Examining these effects will be important for future research assessing the effects of political engagement on mental health, which is beyond the scope of our study. We encourage researchers to test more directly whether a decline in political support may sustain or even exacerbate depressive symptoms, and whether these symptoms maintain worries and stresses around the pandemic. It is important to note that, even if obtained, such reciprocal effects would not invalidate our theory.

Finally, we relied on self-report measures of depression. Although this is a standard method in psychological research and has been recently extended to political behavior, we cannot distinguish between different forms of depression and there may be reporting biases in this approach. Further, our estimates of depression may be conservative if individuals with high levels of depressive symptoms are less likely to participate in surveys, as some research has reported (Korkeila et al., 2001); thus, the negative effects of depression on political attitudes identified here may be even stronger in this group.

Despite these limitations, we believe our cognitive-based model provides a basis for understanding how depression, one of the most common mental health problems, may influence how people who experience depression perceive politics.

## CRediT authorship contribution statement

**Dr Luca Bernardi:** Conceptualization, Data curation, Funding acquisition, Investigation, Methodology, Writing - original draft, Writing - review & editing. **Dr Giovanni Sala:** Formal analysis, Writing - review & editing. **Dr Ian H. Gotlib:** Conceptualization, Writing - original draft, Writing - review & editing.

## Declaration of competing interest

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## Data availability

Data will be made available on request.

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## Online appendix. Supplementary data

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