

Down But Not Yet Out: Depression, Political Efficacy, and Voting

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Depression is one of the most common health problems in the developed world. Previous research has primarily investigated the relationship between depression and voting, largely overlooking its cognitive foundations. We turn to political efficacy as a key political attitude and precondition for political engagement. We build on research into the cognitive aspects of depression to construct arguments linking depression, political efficacy, and voting. Using cross-sectional (European Social Survey) and longitudinal (U.K. Household Longitudinal Study) data, we find evidence for a negative relationship between depression and political efficacy, that depression reduces external but not necessarily internal political efficacy, and for an accumulation effect of depression on (external) political efficacy. We also show that political efficacy is a crucial mechanism for the depression–voting gap. Our research has important implications for political representation.

KEY WORDS: depression, health, political efficacy, political behavior, voting

Depression is a leading cause of disability worldwide and, more than 300 million people suffer from this disorder (WHO, 2018). Furthermore, it is projected to become the world's most burdensome disease in the coming decades (Lépine & Briley, 2011). Hence, depression is proved to have consequences for people's daily life, including politics.

Scholarly attention to depression and political engagement has increased recently, indicating a negative effect of depression on voting. This finding has been replicated across Western democracies (Landwehr & Ojeda, 2020; Ojeda, 2015; Ojeda & Pacheco, 2019; Ojeda & Slaughter, 2019). Although this research has primarily focused on the symptoms of depression and has targeted motivation and resources as primary explanations for the voting gap, we still know little about these mechanisms.

Being associated with pessimism and low self-efficacy, depression is likely to dampen not only a general sense of efficacy but also, by extension, a more specific sense of internal political efficacy (Landwehr & Ojeda, 2020); that is, the feeling of being able to make sense of politics (Craig et al., 1990). Yet, we know from scholarly consensus that *internal* efficacy is only one of the two

dimensions of political efficacy; the other being the perceived governmental responsiveness, namely *external* political efficacy (Morrell, 2003). Although internal political efficacy has been identified as a plausible mechanism for the depression–voting gap, research remains silent on external political efficacy and lacks an empirical test for the mediation of this two-dimensional concept on the depression–voting relationship.

We propose that both types of political efficacy could be mechanisms linking depression and voting. As a major predictor of political participation (Almond & Verba, 1963; Finkel, 1985; Vecchione & Caprara, 2009), political efficacy refers to citizens' belief that, by taking action, they themselves can influence the democratic politics (Abramson & Aldrich, 1982; Campbell et al., 1954, p. 187; Levy, 2013). According to the resource theory of political participation (Verba & Nie, 1972), personal characteristics, such as time, social contacts, and civic skills, make voting and other forms of participation easier and, therefore, increase turnout. Similarly, efficacy can be seen as a cognitive resource that lowers the threshold for participation; those who feel able and motivated to influence politics are also more likely to engage (Smets & van Ham, 2013). Efficacy makes politics seem more understandable and approachable, which facilitates participation.

We theorize about the links between depression and voting and between depression and political efficacy, the latter only recently receiving scholarly attention in health and political behavior studies (Reher, 2020; Shore et al., 2019). Following previous research, we expect a negative effect of depression on voting. Further, we expect depression to have a negative effect on both internal and external political efficacy and that this effect is stronger when experiencing multiple depressive episodes. Then, we argue that both internal and external efficacy mediate the depression–voting relationship.

Our study combines cross-sectional data from the European Social Survey (ESS) and panel data from the U.K. Household Longitudinal Study (UKHLS). The cross-national data enable us to study if the potential link between depression and efficacy is found in countries while the panel data add a temporal perspective to our analysis.

We contribute to existing research in several ways. First, although the impact of health on political participation has been reasonably well studied, specific health problems and the cognitive foundations of political behavior have received less attention (see Mattila et al., 2017). Moreover, research on depression and political attitudes remains limited. Extant studies only focus on political orientations (Bernardi, 2020) and attitudes to change in referendums (Bernardi & Johns, 2021).

Second, by using the UKHLS data we can measure depression both as self-rated symptoms and self-reported diagnosis, which provides a more robust test for the effect of depression on political attitudes.

Third, to the best of our knowledge, we are first to test (albeit imperfectly) for an accumulation effect of depression on political attitudes. Our data do not allow us to analyze the effect of depression at different moments of its cycle. Yet we can reveal something about whether experiencing more than one episode has a different effect, compared to exhibiting only one. This is important because chronic depression can be more debilitating for political participation.

Fourth, by exploring the mediation effect of political efficacy we advance the explanation of the depression–voting gap by showing that it is external and not internal efficacy that drives depressed people's nonvoting decisions. Hence, we identify perceptions of government responsiveness as important objects of intervention for political actors to target, in order to improve depressed individuals' sense of representation.

How Depression Negatively Influences Voting

The first step of our theoretical framework is based on the relationship between depression and voting. Previous research has argued for and empirically substantiated a negative effect of depression on voting. For example, Sund et al. (2017) showed, based on hospital discharge diagnoses,

data on reimbursements for depression drugs and validated turnout data, that persons diagnosed with depression are less likely to vote than others. Similar findings have been reported using self-reported symptoms (Landwehr & Ojeda, 2020). Scholars have argued that symptoms of depression, including anhedonia, sadness, hopelessness, and lack of energy, would explain why depressed people are less motivated and lack physical and mental resources to participate in politics. Since these arguments have already received scholarly attention, below we present arguments for our second step, the one between depression and political efficacy, which has instead been largely neglected in previous research.

How Depression Negatively Influences Political Efficacy

Political efficacy, as a psychological determinant of political behavior, is crucial for understanding political participation. According to Pateman's (1970) influential account, efficacy is a necessary condition for democratic participation, and the two virtuously reinforce each other. Although partly genetically inherited (Klemmensen et al., 2012), most studies suggest that political efficacy develops through political socialization, and that it can be boosted through learning and discussing politics during adolescence and early adulthood (e.g., Kenski & Stroud, 2006; Morrell, 2005).

Political efficacy has its roots in the psychological concepts of self-efficacy (e.g., Bandura et al., 1999; Bono & Judge, 2003) and locus of control (e.g., Renshon, 1974). Self-efficacy refers to a subjective feeling of ability in any domain, while locus of control is the sense of being in control of one's own life rather than feeling powerless in the face of external forces (Levy, 2013). In political science, there is widespread scholarly consensus over the two-dimensional nature of political efficacy. After considerable theoretical development and empirical testing, scholars now consider political efficacy to consist of *internal efficacy*, which refers to citizens' perceptions of their own ability "to understand and to participate effectively in politics" (Craig et al., 1990, p. 290) and *external efficacy*, which refers to perceptions of how responsive political institutions and actors are in reacting to citizens' demands (e.g., Balch, 1974; Morrell, 2003; see also Niemi et al., 1991). In the following sections, we consider the impact of depression on political efficacies in more detail.

Depression and Internal Political Efficacy

Cognitive models of depression are crucial in understanding how depression affects political efficacy. First, Beck's seminal schema theory (Beck, 1976; but see Joormann, 2009, p. 300) postulates that life stressors activate dysfunctional schemas, which lead individuals to filter stimuli in such a way that their attention is directed towards information which is congruent with these dysfunctional schemas. Such schemas include themes of loss, separation, failure, worthlessness, and rejection. When dysfunctional schemas are activated in depression, a person's thoughts automatically start to revolve around pessimistic views about the self, the world, and the future—Beck's cognitive triad. These negative thoughts and biases initiate and maintain depressed mood through a vicious cycle of increasingly negative thinking.

Second, the helplessness/hopelessness model of depression (Abramson et al., 1978, 1989) is based on Seligman's concept of learned helplessness, which states that expectations of a lack of control over events lead to depressive symptoms (Joormann, 2009). 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. Attributing these events to internal causes leads to lowered self-esteem and feelings of worthlessness, which further strengthens the symptoms of depression.

Third, response styles theory has related negative automatic thoughts to rumination (Nolen-Hoeksema, 1991), which involves an overall sense of certainty that situations in one's life are uncontrollable (Nolen-Hoeksema et al., 2008). As a maladaptive coping strategy involving repetitive thinking, 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" (Nolen-Hoeksema et al., 2008, p. 403). Numerous studies have reported associations among dysfunctional attitudes, attributional styles, and other negative cognitions in persons with depression (for reviews, see Joormann, 2009; LeMoult & Gotlib, 2019).

Hence, there are many reasons why depression can negatively affect internal political efficacy: lack of motivation, social isolation and withdrawal (Pietromonaco & Rook, 1987), low self-esteem (Maciejewski et al., 2000), feelings of hopelessness, and mistrust of positive emotions (Paulus & Yu, 2012). Furthermore, people with depression tend to believe that future outcomes are uncontrollable and are more likely to make negative self-evaluations, attribute failure internally, and be pessimistic about the consequences of actions (Coyne & Gotlib, 1983, p. 495). Additionally, mental illness stigma might reinforce this effect, as individuals with depression are likely to internalize stigma and experience significant decrements in self-efficacy as a result (Corrigan et al., 2011; Link & Phelan, 2001).

Depression and External Political Efficacy

Some of the arguments developed above may also apply to external political efficacy. Beck's cognitive triad involves pessimistic views not only about the self but also about the world. Similarly, the helplessness/hopelessness model suggests that feelings of lack of control are projected onto the outside world beyond the self, such as the realm of politics. Depressed persons' pessimistic evaluations, lack of motivation, anhedonia, and mistrust of positive emotions can negatively affect the way these individuals perceive politicians' responsiveness to their concerns. Additionally, research into decision-making in depression suggests important links between depression and external efficacy.

Decision-theoretic approaches from computational neuroscience (Huys et al., 2015) propose that depression is related to underestimating the benefits of change due to biases in priors. Likewise, portfolio theories (Leahy, 1997, 2001) argue that depressed individuals take a risk-averse strategy to minimize loss, actively attempting to resist change. Depressed persons may weigh risks more heavily in their decisions. Indeed, evidence of higher risk aversion in depressed people was found in a study on attitudes to change in the context of the EU Referendum in the United Kingdom (Bernardi & Johns, 2021). If politics is about change and expected to improve people's living conditions, then the resistance to change bias in depressed individuals might translate into negative perceptions of political system responsiveness.

Research on the cognitive aspects of depression has demonstrated negativity biases in multiple cognitive domains including attention, memory, and interpretation (see LeMoult & Gotlib, 2019). Depressive mood is related to negative thoughts, selective attention to negative stimuli, and negative memories (Mathews & MacLeod, 2005). Therefore, self-referential processing may also affect the way in which depressed people perceive political information and evaluate politics more broadly. If depressed people are negatively biased in the way they attend to, recall, and process political information, we can expect depression to reduce external political efficacy.

However, some research suggests that depressed individuals perceive the world in a realistic and not in a biased way (Alloy & Abramson, 1979). Studies report that people with mild depression are more likely to engage in a piecemeal style of social-information processing (e.g., Edwards & Weary, 1993; Gleicher & Weary, 1991) and that people in negative moods engage in more systematic processing than people in positive moods do (e.g., Forgas, 1998; Schwarz, 2002). Whether depressed

people tend to perceive the world more negatively or more realistically would nevertheless point our argument in the same direction, suggesting a negative effect of depression on external political efficacy.

Accumulation Effect of Depression

According to the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), the essential features of a major depressive episode include depressed mood or markedly diminished interest or pleasure in all or most activities most of the day or nearly every day for at least two weeks as well as the presence of other four symptoms (American Psychiatric Association, 2013).¹ The probability of experiencing subsequent depressive episodes increases with each episode (Kessing, 1998; Solomon et al., 2000), and 50%–85% of individuals with depression experience multiple repeat episodes throughout their life-span (Coyne et al., 1999), with more than 75% likely to relapse within 2 years of recovery.

Closely monitoring the phases of major depression to disentangle relapse (the person goes on to have a subsequent episode after a remission) from recurrence (the person fully recovers and suffers a subsequent episode) is not straightforward (Dobson & Dozois, 2008). However, literature suggests that relapse into or recurrence of a depressive episode can have enormous consequences for psychological and brain functioning. For instance, there is extensive and robust evidence implicating rumination in the onset and maintenance of depression (Nolen-Hoeksema et al., 2008). Depressed people often find it difficult to inhibit the processing of negative stimuli and expel them from working memory (Hertel, 2004; Joormann, 2005). Relatedly, cognitive models of depression cited above suggest that cognitive biases in people with depression endure beyond discrete episodes, characterizing the functioning of individuals even when they are not currently depressed (Joormann, 2009; LeMoult & Gotlib, 2019).

Scholars identified a “cycle acceleration” of depression, that is, that with each depressive episode the next episode tends to occur sooner and has a more severe treatment-resistant course than the preceding episode (Keller & Boland, 1998; Maj et al., 1992). Further, neuroimaging and histopathologic studies have found evidence of functional and structural alterations of the brain suggesting that chronic “depression is both predisposed by and perpetuated because of alterations in neuronal function” (see Greden, 2001, pp. 7–8).

Overall, this leads us to expect that the effect of depression on political efficacy may vary cyclically and increase with multiple depressive episodes. Moreover, if depression influences individuals beyond the discrete episode, we should find evidence of this prolonged effect in our panel data. However, ours is an imperfect test because we do not know the complete depression history of our respondents. We can only observe whether the effect of depression on political efficacy is larger when individuals experience depression in previous waves.

How Political Efficacy Mediates the Depression–Voting Connection

We have presented arguments for a direct and negative effect of depression on both internal and external political efficacy and voting and reported evidence from previous research of the effect of efficacy on voting. We conclude our theoretical section by presenting the mechanism for the depression–voting gap. We expect that, by reducing the sense of political self-efficacy and the feeling of responsiveness of the political system, depression also has an indirect effect on voting, channeled through internal and external political efficacy. As we have argued based on the resource theory of participation, internal and external political efficacy are psychological resources, which lower the

¹Major depression is not the only form of depressive disorder. For instance, dysthymia (symptoms persisting for at least two years) or minor depression (less than five symptoms required for major depression) are also within the spectrum of depression. However, our measures are not sophisticated enough to be able to disentangle such differences.

threshold of voting. People with high external efficacy feel they can influence the political process and are likely to see voting as more meaningful and thus have a higher likelihood of voting. Through a similar logic, high internal efficacy, which gives a person a sense of being able to grasp politics, is likely to facilitate voting.

Empirical Evidence of the Effects of Depression on Political Efficacy

To test whether depressed individuals exhibit lower levels of political efficacy than those who are not depressed, we first use cross-sectional data from Round 7 of the ESS. Then, we rely on panel data from Waves 3 and 6 of the UKHLS which enables us to account for changes in time. With both data, we start by analyzing the relationship between depression and the two types of political efficacy. Then we proceed to the mediation analysis where we link depression, efficacy, and voting in parliamentary elections. The direct relationships between depression and turnout are reported in the online supporting information (Tables S1.8 and S2.9).

Although we use two different data, we apply certain rules to keep our empirical approach unified. In the analyses, we use only a limited set of control variables (age, gender, education). The main reason is that the potential causal chains between depression, efficacy, and socioeconomic controls are complex and may, sometimes, be even reciprocal. For example, depression may lead to unemployment and financial problems but, conversely, financial problems may trigger mental health problems. Studies have established that age and gender are related to both efficacy and depression, and depression is more common among women (Rai et al., 2013; Shore et al., 2019), and, hence, their effects should be controlled. Education is positively associated with higher efficacy and lower risk of depression, which suggests that education is a confounder that should be controlled for. However, the complication arises as depression at a young age may also lead to problems in school, which, eventually, can result in low levels of adulthood education. Hence, we tested our models also without education, but the results remained substantially similar.

A limited number of control variables makes the models easier to interpret as the likelihood of including variables that exist in the causal chain between depression and efficacy is lower. However, this strategy may lead to missing variable bias, if some important confounders are excluded. Therefore, we decided on a two-pronged approach. In the main text, we present results from models with a limited set of controls but, in the online supporting information, we repeated the analyses with a fuller set of controls to see if further variables affect the main results. As the data include relatively few missing values, we decided to drop observations with missing values from the analysis, instead of more complex solutions.

Cross-Sectional Analyses With ESS Data

To measure depression in the ESS round 7 data (collected in 2014), we rely on the Center for Epidemiologic Studies Depression Scale (CES-D8) (Radloff, 1977). This is a battery of eight questions pertinent to respondents' mental well-being in the previous week, which we combine into an index for self-rated depression (SRD). These questions tap into many of the depressive symptoms identified by the DSM-5 (see Appendix S1). The SRD originally included scores ranging from 8 to 32, but we have rescaled the scale to between 0 and 24 for ease of interpretation, with higher values indicating more depressive symptoms. The Cronbach's alpha for the index is 0.83. Fifty-nine percent of the respondents in the sample scored between 0 and 5, indicating low values on the depression scale. The total average depression score equals 5.39 ($SD = 4.05$).

To measure internal political efficacy, we combine following items: "Able to take an active role in a political group" and "Confident in own ability to participate in politics" (0 = *not at all* and 10 = *completely*). External political efficacy is captured by responses to "The political system allows

Table 1. The Effect of Depression on Internal and External Political Efficacy (Data: ESS-round 7)

	ESS (21 Countries)	
	Internal Political Efficacy (1)	External Political Efficacy (2)
Depression	-.073** (.013)	-.102** (.011)
Age	-.017 (.010)	-.008 (.006)
Gender: Male	1.414** (.171)	.220* (.095)
<i>Education</i>		
Advanced vocational	-1.960** (.162)	-1.175** (.069)
Upper secondary	-2.998** (.206)	-1.649** (.208)
Lower secondary	-3.657** (.147)	-1.403** (.322)
Less than lower secondary	-5.011** (.283)	-1.837** (.333)
Constant	10.781** (.597)	8.932** (.662)
<i>SD</i> (Depression)	.027 (.006)	.035 (.009)
<i>SD</i> (Constant)	1.374 (.224)	1.413 (.236)
<i>SD</i> (Residual)	4.741 (.093)	4.22 (.066)
<i>N</i>	37,866	37,576

Note: Reference category: “Female” (Gender); “Tertiary” (Education).

* $p < .05$; ** $p < .01$.

people to have a say in what government says” and “The political system allows people to have an influence on politics” (0 = *not at all* and 10 = *completely*). (See Table S1.5 in the online supporting information for correlations and rotated two-factor solution between the efficacy items.) Internal and external political efficacy both range from 0 to 20, with smaller numbers indicating less efficacy. The correlation for items defining internal political efficacy is 0.74 and Cronbach’s alpha 0.85, whereas the correlation for items defining external political efficacy is 0.68 and alpha 0.81 (see Table S1.4).

We analyze the pooled ESS data using a two-level model with a random intercept and random country slopes for the depression variable (see Figure S1.1 for country analyses; Table S1.2 for variable correlations, and Table S1.3 in the online supporting information for descriptive statistics). Although the intraclass correlation coefficient (ICC) in both models is close to zero (0.08 for internal and 0.1 external political efficacy), a likelihood ratio (LR) test indicates that a mixed model should be preferred over a flat linear regression in both Model 1 (LR $\chi^2(2) = 3852.54$, $p < .001$) and Model 2 (LR $\chi^2(2) = 5697.79$, $p < .001$). Also, an LR test shows a preference for a mixed model where both slope and intercept are allowed to vary over a mixed model where only the intercept is allowed to vary (LR $\chi^2(1) = 33.80$, $p < .001$ and LR $\chi^2(1) = 33.98$, $p < .001$ for Model 1 and Model 2, respectively).

Weights are applied at two levels: a combination of design and population weights at the observation level and population size weights at country level. The results are presented in Table 1. Regarding our main independent variable, we find that SRD decreases both internal and external political efficacy in Model 1 and Model 2.² These results remain robust even with the inclusion of additional controls (Table S1.6 in the online supporting information).

Longitudinal Analyses With the UKHLS Data

The UKHLS data have been collected annually since 2009 from over 40,000 households. We use Waves 3 and 6 as only these include political efficacy items. As the data collection for a single wave was scheduled across 24 months, our data come from the 2011–13 and 2014–16 periods. We use weights to correct for possible biases (Knies, 2018).

²Since our second set of analyses is based on U.K. panel, we have reestimated our ESS-based analyses with only the U.K. respondents. These analyses produce very similar results (see Table S1.7 in the online supporting information).

The UKHLS offers questions on both diagnosed and self-rated depression. The first measure indicates a (self-reported) clinical depression diagnosis (CD) based on the question: “Has a doctor or other health professional ever told you that you have any of these conditions?” Respondents were then shown a list of conditions, including “Clinical depression.” Next, respondents were asked whether they still had the condition. According to this measure, about 1.3% of respondents reported being clinically depressed.

The second measure, self-rated depression (SRD), is based on questions on mental well-being, captured by the 12-Item Short Form Health Survey (SF-12) (Ware et al., 1996). This health inventory describes health states that encompass the typical effects of depression (Sugar et al., 1998). We only use the Mental Component Summary (MCS) of this scale, which consists of six questions about respondents’ emotional health during the previous four weeks (see Appendix S2 in the online supporting information). Although not a depression inventory, the MCS subscale has been validated as a means of detecting depression in population samples (Kiely & Butterworth, 2015; Vilagut et al., 2013). Questions contain five categories, forming an overall index from 6 to 30, with lower values denoting poor mental health (Cronbach’s alpha = 0.85). We use 15 as a cutoff point so that all respondents scoring less than 16 on the scale are classified as depressed. Although setting a threshold to disentangle clinical versus nonclinical levels is far from easy, our cut-off point categorizes about 5% of respondents in the data as depressed, which is roughly in line with the WHO’s (2017) estimates of the prevalence of depression in the United Kingdom. Furthermore, as the chosen threshold is always somewhat arbitrary, we also tested alternative models where the change in the SRD score in consecutive waves for each respondent is used.

Our political efficacy measures are based on four Likert-style statements. The first two measure internal efficacy (“I think I am better informed about politics than most people”; “I consider myself to be well qualified to participate in politics”) and the two latter measure external efficacy (“Public officials don’t care much about what people like me think”; “People like me don’t have any say in what the government does”). To produce an index for the two types of political efficacy, responses were summed together (for external efficacy, the scales were first reversed). As the original scales for all statements ranged from 1 to 5, the new scales varied between 2 and 10. For easier interpretation, we subtracted 2 from each scale to make them vary between 0 and 8, with higher values indicating stronger efficacy. The Pearson’s correlation coefficient for internal efficacy items was 0.65 (Cronbach’s alpha = 0.79) and 0.61 (Cronbach’s alpha = 0.76) for external efficacy items (see Table S2.3; see also Table S2.4 in the online supporting information for two-factor solution between the efficacy items).

Table 2 shows the mean values of internal and external political efficacy for nondepressed individuals and those with clinical or self-reported depression. As the possible values vary between 0 and 8, the averages for all groups are slightly below the midpoint of the scale (4). For both types of efficacy, respondents with depression report lower levels, and the differences between those with and without depression are similar in size. The difference in internal efficacy levels between the two groups is about 0.4, while for external efficacy the difference is slightly larger.

As measures of efficacy are available from two waves only, we model the effects of depression on efficacy by using the latest measurement of efficacy as the dependent variable. We assume that current levels of internal or external efficacy are affected by their previous levels, and to account for this, we add the lagged value of efficacy in the model. The idea is that attitudes are “sluggish”; they change relatively slowly, and current levels of efficacy are hence affected by their past values. The coefficients on these lagged efficiency variables show how much current efficacy is affected by past efficacy.

Our main interest, however, is on the depression variables. We test if both the current and the previous values of depression variables are related to efficacy. If only the variable measuring current depression is significant, this suggests that there are no observable long-term effects of depression. A significant coefficient on the lagged depression variable suggests that there might be longer term effects of depression on efficacy. Finally, we add an interaction variable of the current and the lagged

Table 2. Means of Internal and External Political Efficacy on a Scale from 0 to 8 Among Those With and Without Depression (Data: UKHLS)

	Clinical Depression	Self-Reported Depression
	(Depressed/Not Depressed)	(Depressed/Not Depressed)
Internal efficacy	3.08/3.48 ($t = -3.93, df = 413, p < .01$ Cohen's $d = -0.20$)	3.02/3.48 ($t = -9.83, df = 2147, p < .01$ Cohen's $d = -0.24$)
External efficacy	2.58/3.30 ($t = -7.65, df = 397, p < .01$ Cohen's $d = -0.39$)	2.53/3.34 ($t = 18.83, df = 2137, p < .01$ Cohen's $d = -0.44$)

Note: Results from t -tests with unequal variances assumed in parentheses.

depression to capture the potential accumulative effect of two experienced depression incidences. A statistically significant interaction would mean that these two depression incidences have a combined accumulative effect on efficacy that is larger than just two individual episodes added together would have.

The value 1 of the clinical-depression dummy variable refers to (self-reported) diagnosed depression. The SRD variable, measuring self-rated depression symptoms, is rescaled to vary between 0 and 1 (by subtracting the minimum value from it and dividing it by its maximum value). This way the magnitudes of the coefficients are (roughly) comparable.

We present the estimates of the models visually in [Figure 1](#) (full results reported in [Appendix S2.5](#) in the online supporting information). The figure shows sizes of the depression variable coefficients and the coefficient of the lagged efficacy variable and corresponding 95% level confidence intervals when the dependent variable was internal efficacy (panels on the left) and external efficacy (panels on the right). The model also includes control variables (gender, age, education), but to keep the figure easy to read these are not shown (full results reported in [Table S2.5](#)).

[Figure 1](#) shows that there is no relationship between internal efficacy and depression when using the clinical measure of depression (top-left panel). Neither the coefficient for the current nor the lagged measure of clinical depression are statistically significant. The same is true for the interaction effect. The situation is somewhat different with self-rated depression symptoms (lower-left panel). Here the variable measuring current depression is significant, indicating that persons scoring high on this measure are more likely to have lower levels of internal efficacy. However, in the overall evaluation of the results regarding internal efficacy, one needs to be very cautious as the results are not consistent in the two models.

The results related to external efficacy are easier to interpret. Current depression is significant for both the clinical and self-rated measures of depression, indicating a negative relationship between depression and feelings of external efficacy. For self-rated depression, the interaction term is also statistically significant. This indicates that scoring high on this measure in both time points has an additional negative joint effect: The effect on efficacy is larger than just two individual depression incidences added together, suggesting a cumulatively increasing effect of multiple depression incidences.³

However, the previous results were based on a cross-sectional analysis (although with some lagged variables included) of the UKHLS data. Panel data can also be used to study how changes in one's depressive status affect political efficacy. Although efficacy is measured only in two waves, the self-rated depression measures are available in all waves. We utilize this to analyze if a change in the amount of self-reported depression symptoms between the current and previous wave affects efficacy.

³In [Table S2.8](#) in the online supporting information, we replicate the accumulation-effect analysis with an alternative specification. Results are largely consistent with the ones reported in [Figure 1](#), whereby the effect of depression on external political efficacy increases with the number of times respondents indicated that they suffered from either CD or SRD.

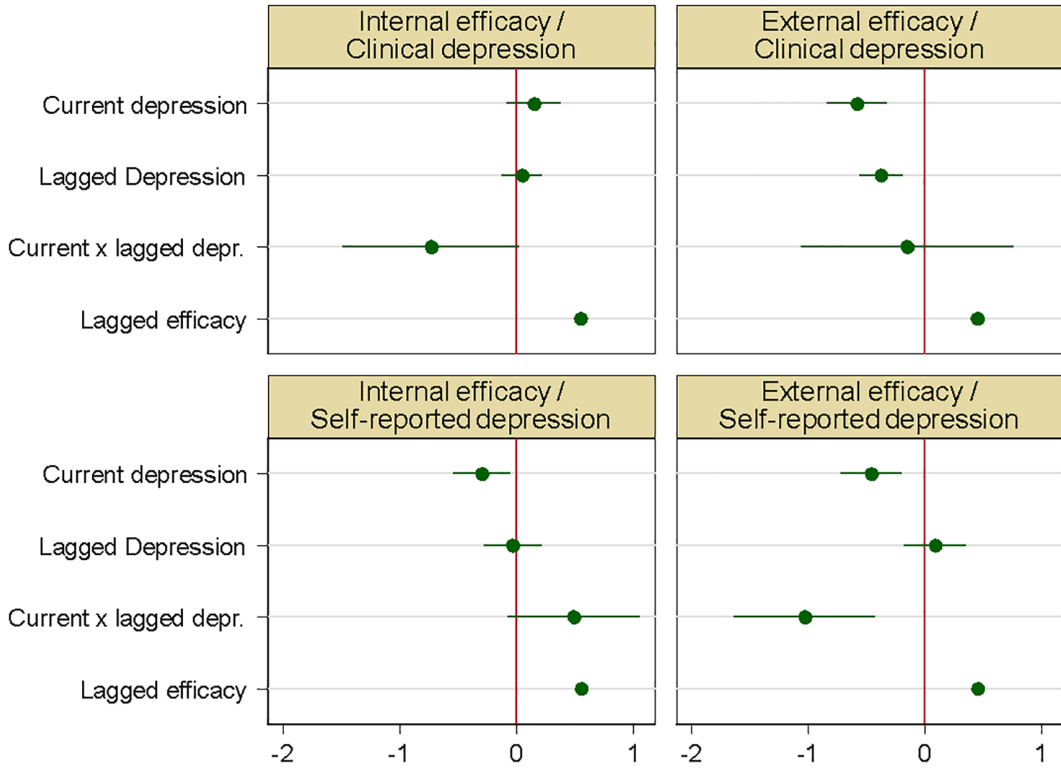


Figure 1. Effects of depression and lagged efficacy on current levels of efficacy with 95% confidence intervals (Data: UKHLS).

We use both random and fixed-effect models. Random-effects models (RE) produce estimates that account for both between- and within-variation of the independent variables. This means that they factor in both the differences between the panel participants and changes in time for individual participants. Random-effects models enable the inclusion of time-invariant variables, such as gender. Fixed-effects models (FE) automatically control for all time-invariant factors, thus alleviating the potential problem of missing variable bias, which is always a problem with observational data. In fixed-effects models, we know that time-invariant variables, such as genetic influences, childhood experiences, or even stable personality traits, are controlled for.

Figure 2 shows results from analyses where we analyzed how a change in the SRD score influences efficacy. Again, internal efficacy is not robustly related to depression, but the situation is different for external efficacy. Results from both random- and fixed-effects models show that when depressive symptoms for a respondent increase compared to the previous year, the level of external efficacy decreases. The within-person changes in the SRD score vary between 0 and 1. Thus the largest within-person change in SRD would imply a change of about -0.28 in external efficacy in the fixed-effects model.

Mediation Analysis

Lastly, we perform mediation analyses where we assume that depression first affects feelings of efficacy, which, in turn, affect the likelihood of a respondent voting in parliamentary elections. We apply the *medsem* package developed by Mehmetoglu (2018) to decompose the effect

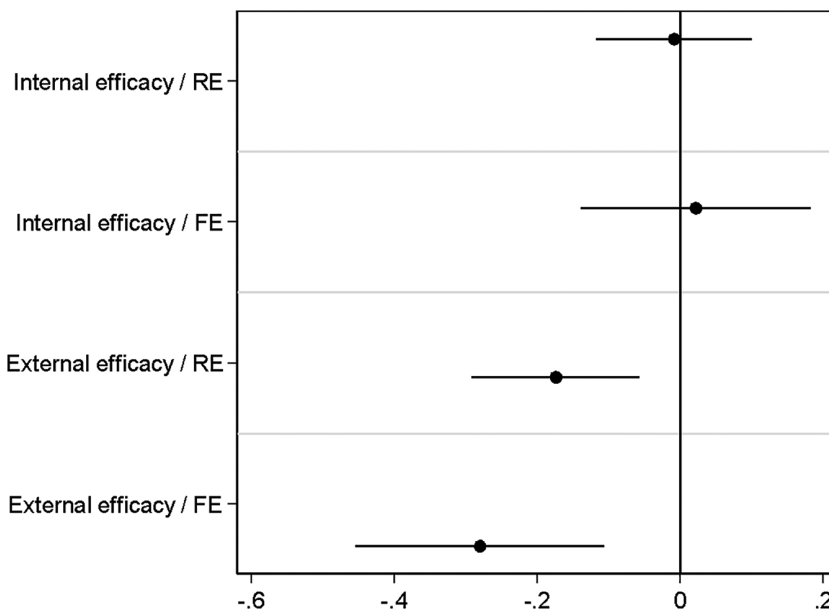


Figure 2. Coefficients on the change in self-reported depression (SRD) scores on political efficacy with 95% confidence intervals. Fixed- (FE) and random-effects (RE) models (Data: UKHLS).

of depression on voting, distinguishing between direct and indirect parts. If the indirect effect is strong, we can ascertain that lowered efficacy is one mechanism through which depression impacts voting behavior.

In the ESS data, voting is measured by asking whether respondents voted in the previous national parliamentary elections. In the UKHLS data, voting intentions were elicited with the question “Thinking of a scale that runs from 0 to 10, where 0 means very unlikely and 10 means very likely, how likely is it that you will vote in the next general election?” With both dependent variables, we used linear regression.

With the cross-sectional ESS data, it is only possible to use concurrently measured variables. However, the situation is different for the UKHLS data. Ideally, we would like to use variables for depression, efficacy, and voting intention, each measured at separate times. Unfortunately, this setup is problematic for theoretical and practical reasons. Depression is cyclical, which presents a problem as the UKHLS waves were collected annually. This means that separating the measurement of depression from the measurement of efficacy, and efficacy from the measurement of voting intentions, would mean that depression would be measured 2 years before voting intention, which is a long time given fluctuations in depression periods. A further problem is that voting intentions are measured only in the same modules as political efficacy. This means that we cannot separate the measurement of these two factors in time. However, depression is measured in every wave, and we can lag it by 1 year in our mediation analysis. As 1 year is also a relatively long period, we decided to perform the mediation analysis in two ways. First, we use data with all three variables simultaneously measured in the same wave. In the second analysis, we exploit the panel data characteristics of the UKHLS data by lagging the depression variable by 1 year.

Table 3 shows the extent to which internal and external efficacy mediate the effects of depression on voting or vote intentions (coefficients for direct and indirect effects are in parentheses, see Appendix S3 in the online supporting information for details). The figures are percentages, which show how much of the effect of depression on voting is mediated through efficacy. With ESS data,

results show that about 11% of the effect of depression on voting is mediated by internal efficacy, and 10% is mediated through external efficacy. In more practical terms, this means that, of the total effect depression has on voting intentions, 10% is channeled through external efficacy and the rest takes place through other mechanisms.

The UKHLS data indicate that no statistically significant mediation takes place through internal efficacy, which is unsurprising as we did not find a consistent relationship between internal efficacy and depression in these data. However, approximately 23% to 38% of the total effect of depression is mediated through external efficacy, depending on whether we use concurrent or lagged measurements of depression. Hence, the mediated effect seems to be larger in the UKHLS than in the ESS data, but the substantive significance of these differences is difficult to evaluate as the voting questions were not formulated identically in these two surveys.

Discussion

Depression affects individuals' cognitive processes in many ways. Although results somewhat vary, we have demonstrated a link between depression and political efficacy. The cross-sectional data show that levels of both internal and external efficacy were lower among those with depression in most European countries. The panel data indicate that depression is related to lower external efficacy but the results concerning internal efficacy were less convincing. Importantly, more incidences of depression were found to have larger effects on external efficacy than just a single incident.

Our data cannot provide an answer for the discrepancy between internal and external efficacy, but the implications can be discussed. We report a negative association between depression and internal political efficacy with the ESS data, which aligns with other studies reporting associations between depression and low self-esteem, self-efficacy, and sense of hopelessness. However, the results with the UKHLS data were less conclusive. Furthermore, we did not find evidence for a long-term effect on internal efficacy. Thus, it could be that, like many subjective feelings, internal political efficacy is more a trait which tends to be lower for people vulnerable to depression rather than a state subject to change. Moreover, it is possible that while depression makes it hard for persons to get things done and to function normally in everyday life, it does not necessarily affect their beliefs in their capacity to understand the surrounding world. Put differently, it may be that depression has an attitudinal influence on the "taking action" but not the self-perception of whether one's action matters. However, the impact of depression on internal political efficacy may be indirect. For instance, if rumination leads depressed people to believe that they lack the efficacy to engage in constructive behavior (Nolen-Hoeksema et al., 2008), repetitive negative thinking may be a significant mediator between depression and internal political efficacy, which future research should explore further.

Our finding that depression is negatively associated with external political efficacy may be explained by cognitive biases associated with depression (Joormann, 2009; LeMoult & Gotlib, 2019).

Table 3. Mediation Percentages of Depression Through Efficacy for Voting in Previous Parliamentary Elections (ESS) and Voting Intention (UKHLS)

		UKHLS (Depression Concurrent)		UKHLS (Depression Lagged)	
ESS		Clinical Depression	Self-Reported Depression	Clinical Depression	Self-Reported Depression
Internal efficacy	11%** (-.007/-0.001)	0% (-0.701/0.003)	7% (-0.333/-0.026)	4% (0.257/0.010)	8% (0.052/-0.037)
External efficacy	10%** (-.007/-0.001)	23%** (-0.701/-0.207)	38%** (-0.333/-0.201)	31%* (-0.257/-0.113)	26%** (-0.526/-0.185)

Note: Direct/indirect effects in parenthesis.

* $p < .05$; ** $p < .01$.

If depressed people are negatively biased in the way they interpret information, they would also perceive government responsiveness to be lower. Hence people prone to depression would attribute bad outcomes to global, stable, and internal factors (Seligman et al., 1979)—that is, the government does not care about people like me. However, depressed individuals' worldviews, said to be more critical and realistic by some scholars (Alloy & Abramson, 1979; Gleicher & Weary, 1991), might alternatively explain why depressed people exhibit more negative views of government responsiveness.

We also show that depression reduces external political efficacy and that an overtime accumulation of symptoms dampens external efficacy even more severely. These results make sense from a cognitive viewpoint if depressed people show negative biases which are likely to last longer than the discrete episode. As depression is not only (negatively) associated with external efficacy, but also reduces it, it has important implications when trying to understand the causal effects of depression on politics.

We have also discussed whether the negative relationship between depression and political efficacy is further reflected in actual political behavior. We examined if political efficacy can function as a mechanism, which mediates the effect of depression on voting. Again, we observed a discrepancy. The cross-sectional data suggest that internal and external efficacy both play a role in explaining the turnout gap between people with and without depression. However, the panel data show that it is only external efficacy that channels the effect of depression on voting, supporting findings from the first phase of the analysis. This finding may be related to the potential difference between internal and external efficacy that we pointed out above. If internal efficacy is more a trait than a state—that is, less likely to follow changes in persons depressive symptoms than external efficacy—it is understandable that depression is more likely to be mediated by external than internal efficacy.

The challenge of studying the impact of depression on political behavior is that both occur cyclically. People are not depressed all the time but typically have recurring episodes. Similarly, people do not engage in politics all the time either (usually only during elections). It is difficult to obtain data where depression and political behavior occur within the right temporal distance from each other. We have sought to deal with this issue by using different types of data and both lagged and unlagged variables.

Nevertheless, our findings underline the importance of mental health problems as an understudied driver of political behavior and the significance of efficacy as a mediator between cognitive patterns and political action. Approximately one-quarter to one-third of the total impact of depression on voting propensity is due to low external efficacy. Our analysis reveals a mechanism through which depression lowers voting propensity by lowering a person's belief in the responsiveness of the political system. This not only pinpoints the relevance of external efficacy as a mediator between thinking and acting but also highlights the significance of responsiveness as a feature of democracy: If we wish to lower the threshold of political engagement for depressed people, it is essential to ensure that the political system is perceived as being responsive to citizens' demands. Therefore, we suggest, for instance, policy interventions that tackle policymakers' agenda representation on the mental health issue. Paying attention to policy issues people care about is a necessary condition for policy representation to occur (Bevan & Jennings, 2014; but see also Bernardi, 2021).

Following the health and political-behavior tradition, our research analyzed depression as an independent variable. However, we cannot rule out that decreased levels of political efficacy might contribute to depressive symptoms. More research in this direction is needed. Relatedly, future research should consider the political environment as a factor that can negatively affect the way individuals perceive politicians' responsiveness to their needs. It would be interesting to explore whether policy implementation and feedback influenced political efficacy (Mettler & Soss, 2004), which in turn might have implications for the mental health of citizens affected by those policies.

Furthermore, alternative mechanisms, such as trust (see Mattila, 2020; Mattila & Rapeli, 2018), are likely to play a part in mediation between depression and voting, and future research should evaluate also other possibilities. Finally, and crucially, future work needs to analyze whether perceived

unresponsiveness translates into actual policy unresponsiveness. Evidence of underrepresentation in policy was found across other groups, including health groups (Pacheco & Ojeda, 2020). This leaves us pessimistic regarding mental health and perhaps may posit a tougher test for our optimistic “down but not yet out” aphorism.

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Supporting Information

Additional supporting information may be found in the online version of this article at the publisher's web site:

Appendix S1. European Social Survey (ESS), Round 7

Section S1.1. Self-Reported Depression

Table S1.1. Average Scores and Number of Cases (*N*) for Dependent and Independent Variables

Figure S1.1. Coefficient estimates of self-reported depression on internal and external political efficacy for each country.

Table S1.2. Correlations of the Main Variables

Table S1.3. Descriptive Statistics of the Main Variables

Table S1.4. Bivariate Regression of the Depression and Political Efficacy Variables

Table S1.5. Correlations & Rotated 2-Factor Solution between the Efficacy Items

Figure S1.2. Predicted values of external and internal efficacy by different levels of self-rated depression.

Table S1.6. Replication of Analyses in Table 1 with Additional Controls

Table S1.7. The Effect of Depression on Internal and External Political Efficacy in the UK with Additional Controls

Table S1.8. The Effect of Depression on Voting Intentions

Appendix S2. UK Household Longitudinal Study (UKHLS)

Section S2.1. Clinical Depression

Section S2.2. Self-Reported Depression

Table S2.1. Correlations between Main Variables

Table S2.2. Descriptive Statistics of the Main Variables

Table S2.3. Bivariate Regression of the Depression and Political Efficacy Variables

Table S2.4. Correlations & Rotated 2-Factor Solution between the Efficacy Items

Table S2.5. Effect of Depression on Internal and External Political Efficacy

Figure S2.1. Predicted values of external and internal efficacy by different levels of current self-rated depression (left) and lagged self-rated depression (right).

Figure S2.2. Predicted values of internal and external efficacy by different levels of current clinical depression (left) and lagged clinical depression (right). Clinical depression was measured with a dummy (1 = yes, 0 = no). The results for the interaction term are not displayed as it was not statistically significant in these regressions.

Table S2.6. Effect of Depression on Internal and External Political Efficacy with Additional Controls

Table S2.7. Effect of Change in the Number of Self-Rated Depressive Symptoms on Internal and External Political Efficacy

Table S2.8. Cumulative Effect of Multiple Depression Periods on Internal and External Political Efficacy

Table S2.9. The Effect of Depression on Voting Intentions

Appendix S3. Mediation Analyses

Table S3.1. Mediation Analysis (ESS Data)

Table S3.2. Mediation Analysis, Clinical Depression (UKHLS Data)

Table S3.3. Mediation Analysis, Self-Reported Depression (UKHLS Data)