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# The emotional consequences of novel political identities: Brexit and mental health in the United Kingdom

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## Abstract

Following the 2016 EU referendum on Britain's membership in the European Union, many people described themselves as “Leavers” or “Remainers.” Here, we examine the emotional responses associated with Brexit identities using survey data collected from two nationally representative samples of the British public in 2019 ( $N=638$ ) and 2021 ( $N=2,058$ ). Confirmatory factor analysis indicated that many in both samples had coherent Leave or Remain identities. Remain and, to a lesser extent, Leave identities (regardless of how people actually voted in the referendum) predicted distress about Brexit-related events and clinical symptoms of depression and anxiety at both time points. Structural equation models suggested that the effect of identities on symptoms was largely mediated by distress about Brexit-related events. We demonstrate a lasting impact of Brexit on the mental health of UK citizens and show that the formation of novel political identities has been more important in this process than voting behavior.

## KEYWORD

anxiety, brexit, depression, identity, mental health

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## INTRODUCTION

Social psychologists use the term *social identity* to describe the way individuals internalize their group memberships and thus define themselves (Tajfel, 1979, 1981). Social identities can be formed around multiple categories, such as ethnicity, nationality, religion, occupational groups, neighborhoods, or even sports teams and pastimes (Turner et al., 1987). However, since the earliest days of modern democratic institutions, it has also been known that people can form identities in relation to political movements and parties; in a historical survey of this idea, Achen and Bartels (2016) trace it as far back as to James Madison's Federalist Paper No. 10. In the present article, we explore the consequences for emotional health when individuals form strong and competing identities during a political crisis, namely, the ongoing debates about the future of the United Kingdom following the 2016 EU referendum, also known as Brexit.

According to social identity theory, people categorize themselves by their group memberships, and the resulting identities can be a source of self-esteem when people favorably compare their own group to that of others (Tajfel & Turner, 1979). Hence, a considerable volume of research has demonstrated that people with strong identities experience benefits in terms of well-being and resilience to ill health and psychological disorders (e.g., see Haslam et al., 2009; Jetten et al., 2015), a finding that has led some researchers to describe the effects of a person's social relationships, networks, and support, as well as other social identity-based resources, as a "social cure" (Jetten et al., 2009). Yet not all consequences of social identities are positive. Some scholars, for instance, have demonstrated that individuals who strongly identify with devalued or negatively stereotyped groups can exhibit higher levels of cortisol (a main stress hormone) and cardiovascular reactions indicative of threat (Eliezer et al., 2010; Townsend et al., 2011; for a helpful review of social identity threat, see Major & Schmader, 2018). In addition, scholars of political psychology have observed that the consequences of identities, particularly among certain national (Mlicki & Ellemers, 1996) and partisan (Kalmoe & Mason, 2022; Mason, 2018) groups, are not always benign. When identities form around political movements, they are associated with strong emotions and motivated reasoning to defend those identities, sometimes resulting in excessive partisanship and polarization within societies (Greene, 1999, 2004; Huddy, 2001; Huddy & Bankert, 2017; Huddy & Khatib, 2007; Huddy et al., 2015).

Research into social identity formation, beginning with Sherif's (1954) Robbers Cave experiment, has demonstrated that individuals form strong attachments to groups when they become orientated toward shared goals. Studies using the minimal group paradigm, for instance, in which individuals are assigned to groups based on arbitrary criteria (e.g., preference for the art of Paul Klee vs. Wassily Kandinsky), have shown that identities can form very quickly and that, despite the arbitrary nature of the resulting groupings, they can lead to both explicit and implicit favoritism toward the ingroup (Otten, 2016). Although the originator of the paradigm, Henri Tajfel (1979, 1981), believed that it allowed the investigation of mechanisms by which identities are created, he argued that historical analysis was required to explain the circumstances under which specific identities become salient. Indeed, as might be expected from his findings, history provides numerous examples of political crises in which identities were formed rapidly, often leading to widespread emotional distress and social conflict, for example, during religiously inspired conflicts of the sixteenth and seventeenth century (Braddick, 2016), which included the English Civil War (Leng, 2015), the emergence of the Xhosa cattle-killing cult in the Eastern Cape in 1856 (Peires, 1986), and the French Dreyfus Affair at the end of the same century (Begley, 2009). In each of these episodes, conflicting novel identities ("Royalist" and "Roundhead," the "Soft" and the "Hard," "Dreyfusards" and "Anti-Dreyfusards") were quickly formed, leading to widespread emotional turmoil and conflict.

Just as in the aforementioned examples, the issue of whether the United Kingdom should remain in the European Union (EU) became a hotbed issue that served to divide the British

public into two distinct camps. The campaigns that led up to the referendum engaged a large number of previously politically uncommitted citizens, as evidenced by the high turnout (72%) compared to most recent UK elections, and the result provoked a vigorous debate about the manner of withdrawal, and even about whether a second “people’s vote” should be carried out with the possibility of reversing the result. Often acrimonious debates in the UK Houses of Parliament led, eventually, to the United Kingdom’s formal departure from the EU on January 31, 2020, but, at the time of writing, disagreements continue about the economic and social consequences of the departure, with polling indicating that UK public opinion continues to be highly polarized on the issue (Curtice, 2021).

In the immediate aftermath of the referendum, the British population thus became rapidly organized around the novel identities of “Leavers,” those who had voted to leave the European Union or believed this to be a good policy, and “Remainers,” those who had voted to remain, hoped that the United Kingdom would remain an EU member state, or wished that it would rejoin the EU (Hobolt et al., 2018). These two identities were associated with rapid affective polarization; for example, group members held strongly negative stereotypes of each other (e.g., judging members of the outgroup as less intelligent), reported considerable discomfort about the idea their children would marry someone of the opposite Brexit camp, and saw their views of politicians appointed to nationally important positions impacted (Hobolt et al., 2020). Whereas prior to the EU referendum, future Remainers and Leavers did not differ on their appraisal of the British economy, afterward they demonstrated motivated reasoning by diverging in their evaluations (e.g., Remainers typically interpreted economic news more negatively, especially if they were primed to think about their identity beforehand; Sorace & Hobolt, 2021).

We argue that when identities form around new political movements like Brexit, there may also be negative implications for the mental health and well-being of the individuals concerned. The nature and intensity of this negativity depend in part on a number of contextual factors, such as the content and news coverage of the political debate, elite contestation (or consensus), and the ease with which the public understands and values the issue at hand. As was the case following the 2016 EU referendum, political crises typically create competing identities, leading to interpersonal conflict, as well as protracted and difficult-to-resolve debates about ongoing policy options.

## The impact of Brexit on mental health

There is some quantitative evidence that the formation of Brexit identities has had a lasting emotional impact on the UK population. For instance, an early study by Vandoros et al. (2019) reported an increase in antidepressant prescriptions (relative to non-psychotropics) in the immediate aftermath of the EU referendum (with the caveat that the increase could also be attributable to *lower* prescribing rates of the non-psychotropics). Using Understanding Society survey data collected immediately before (Wave 7) and after (Wave 8) the EU referendum, Powdthavee et al. (2019) found that mental distress as measured by the General Health Questionnaire (Goldberg, 1972) appeared to increase in both leave *and* remain voters. In an analysis of the same survey waves inspired by research on the ethnic density effect (i.e., the greater risk of psychiatric disorders in ethnic minorities when living in predominantly ethnic majority areas; see Bosqui et al., 2014), Saville (2020) reported a “Brexit density effect,” such that those holding the local majority opinion had better mental health than those who held a minority opinion about leaving the EU. Furthermore, Kavetsos et al. (2021) used Eurobarometer data from 2015 to 2019 to compare subjective well-being (measured using a single question) between UK citizens and a control group constructed from European nations least economically linked to the United Kingdom (and therefore least likely to be affected by Brexit). Well-being decreased during this period in the United Kingdom but increased in the EU control countries,

and the deleterious effect on the UK population was estimated to be about the same as widowhood or about one-third of the effect of becoming unemployed. Although Kavetsos et al. did not distinguish between UK participants according to how they voted in the referendum, those with a more positive view of the EU suffered the greatest effect. Importantly, this effect did not diminish over the time of the study. Finally, analyses of qualitative data have demonstrated that fervent Remainers described the emotional impact of the referendum result “as bereavement, death, heartbreak or something akin to a physical injury,” as well as using language that they were genuinely “saddened, depressed, fearful, anxious” (Brändle et al., 2018, pp. 821, 823, respectively). These studies also have demonstrated that Brexit negatively impacts people from minoritized and marginalized communities and unsettles those in transnational families (see, e.g., Benson & Lewis, 2019; Kilkey, 2017; Solanke, 2020).

In summary, there is some evidence that (a) mental distress increased in the United Kingdom after the EU referendum, (b) this effect persisted over time (at least until 2019), (c) it was not matched by increasing mental distress in countries unaffected by the referendum, and (d) those who held Brexit-related opinions discrepant with the majority in their area were worst affected. However, two important limitations of these studies are that Brexit identities were defined simply in terms of voting history or the answer to a simple question about attitudes toward leaving the EU—that is, *not* identification with these newly defined social groups, which is the sine qua non of social identity theory—and used nonspecific measures of well-being and mental health.

## Purpose of the present study

In the present study, we use nationally representative survey data collected in 2019 and 2021 from independent samples to address the following areas of research. First, in research to date, Brexit identities have been defined in terms of attitudes toward the United Kingdom's membership in the European Union. However, social identities are usually defined in terms of internalized group membership (i.e., *belonging* to a group of people who are considered similar; see Turner et al., 1987), and we wished to investigate whether these identities could be defined independently of voting history (i.e., regardless of whether or how people actually voted to remain or leave). We expected this to be the case because, of course, some people chose not to vote or were unable to do so (e.g., they were under the voting age at the time), and many of those who did vote may not have made strong commitments to the policy for which they voted. Second, we expected Brexit identities would predict distress about Brexit-related events following the referendum, and that this associated effect would be greater than that of mere voting history. Third, we wished to see whether these effects could be detected using widely used self-report screening tools for clinical depression and generalized anxiety—in other words, whether there has been an effect not just on well-being and distress but also on the clinical mental health of the UK adult population. We predicted that any impact of Brexit on the mental health of Remainers and Leavers would be mediated by distress specifically pertaining to Brexit-related events.

## METHODS

### Data

A nationally representative sample of participants for the 2019 survey was recruited online by the survey company Qualtrics June 28–July 9, 2019, using quota sampling benchmarked against the UK Census in terms of gender, age, and household income. A total of 722 UK

residents attempted the survey, and after removing incomplete surveys that were terminated early or those completed implausibly quickly (predefined following pilot work by the survey company as less than 15 minutes), the final sample was 638. Of this total, 46.5% were male with a mean age of 46.60 years ( $SD = 15.83$ ), and 53.60% were female with a mean age of 43.77 years ( $SD = 16.16$ ). Twelve participants reported they had been ineligible to vote in the 2016 EU referendum, and an additional 82 abstained, which left 272 participants who had voted to leave (42.63% of the sample) and exactly the same number who had voted to remain (42.63%).

Participants for the 2021 survey took part in Wave 6 of the COVID-19 Psychological Research Consortium (C19PRC) Study assessing the impact of the SARS-COV-2 pandemic over time on the health of the UK population (for more details about the data, see McBride, Butter, et al., 2021; McBride, Murphy, et al., 2021; McBride et al., 2022). The first wave of longitudinal survey data was collected by Qualtrics in March 2020 (during the first national lockdown in the United Kingdom) and consisted of 2,025 respondents using quota sampling benchmarked to the UK Census in terms of gender, age, and household income parameters. Additional analyses revealed that the sample was not only representative of the UK population in terms of the quota variables (e.g.,  $M_{\text{age}} = 45.91$  years,  $SD = 15.79$ ; Gender: 51.94% female, 47.76% male) but also, broadly, in terms of many other sociodemographic indicators (McBride, Murphy, et al., 2021). Subsequent waves of the longitudinal study have recontacted participants (average retention rate across all six survey waves was 57.4%), and new participants were recruited to replace those respondents lost to panel attrition. Qualtrics and its partners recruited 1,643 recontacts between August 6 and September, 28, 2021, with an additional 415 new participants between September 8 and 28, 2021. Of the 2,058 participants, 45.3% ( $n = 932$ ) voted to remain in the EU, 37.3% ( $n = 768$ ) voted to leave, 13.1% ( $n = 269$ ) indicated that they did not vote, and 4.3% ( $n = 89$ ) were ineligible to vote in the 2016 EU referendum. These proportions suggest some selective attrition of leave voters across the C19PRC survey waves, which we consider as a limitation when we discuss our findings.

## Measures

**Leave and Remain identities** were assessed using three items each, adapted from Doosje et al. (1995): (a) "I feel a strong sense of belonging with people who voted to leave/remain in the European Union"; (b) "I identify strongly with people who voted to leave/remain in the European Union"; and (c) "I feel strong ties to Leavers/Remainers." Responses were based on 5-point scales anchored by *strongly disagree* = 1 at one end and *strongly agree* = 5 at the other. To ease interpretation, all variables used in the analyses were rescaled to range from 0 to 1, so that a one-unit change in each predictor was equivalent to moving from the minimum to the maximum value of the scale. Coefficient alphas for Leave and Remain identities were excellent; in the 2019 sample (Leave:  $M = .47$ ,  $SD = .31$ ; Remain:  $M = .50$ ,  $SD = .33$ ), they were .92 and .97, respectively; in the 2021 sample (Leave:  $M = .42$ ,  $SD = .30$ ; Remain:  $M = .52$ ,  $SD = .29$ ), they were .94 and .95, respectively. In the 2019 sample, these questions were only asked of those who voted in the 2016 EU referendum; in 2021, they were asked of all respondents.

**Brexit distress** was assessed with four items: "Events connected to Brexit have..." (a) "...affected my mental health," (b) "...made me *anxious*," (c) "...made me *angry*," and (d) "...made me *distressed*." Responses were based on 7-point scales anchored by *completely disagree* = 1 and *completely agree* = 7. A scree plot and exploratory factor analysis (EFA) of both data sets suggested a single factor fit the data best: In the 2019 sample, only one eigenvalue of 2.93 was greater than 1, and the one-factor solution accounted for 67% of the variance; in the 2021 sample, only one eigenvalue of 3.42 was greater than 1, and the one-factor solution accounted for an impressive 81% of the variance. The resulting scales had excellent reliability: in 2019,  $M = .44$ ,  $SD = .27$ ,  $\alpha = .85$ ; in 2021,  $M = .39$ ,  $SD = .29$ ,  $\alpha = .93$ .

**Depression** was assessed with the Patient Health Questionnaire-9 (PHQ-9; Kroenke & Spitzer, 2002), a validated clinical screening instrument used by UK psychological therapy services (National Collaborating Centre for Mental Health, 2018). Participants indicated how often they have been bothered by each of nine symptoms over the previous two weeks using a 4-point Likert scale ranging from *Not at all*=0 to *Nearly every day*=3. Total scores could range from 0 to 27, with higher values indicative of higher levels of depression. Using a cutoff score of 10 produces adequate sensitivity (.85) and specificity (.89) for “moderate” levels of depression (Manea et al., 2012). The psychometric properties of the PHQ-9 scores have been widely reported, and the reliability of the summed scale among the current samples was excellent (in 2019:  $M = .31$ ,  $SD = .27$ ,  $\alpha = .93$ ; in 2021:  $M = .22$ ,  $SD = .25$ ,  $\alpha = .94$ ).

**Generalized anxiety** (2021 sample only) was measured using the Generalized Anxiety Disorder 7-item Scale (GAD-7; Spitzer et al., 2006). Participants indicated how often they have been bothered by each of seven symptoms over the last two weeks on a 4-point Likert scale ranging from *Not at all*=0 to *Nearly every day*=3. Total scores could range from 0 to 21, with higher values indicative of higher levels of anxiety. The GAD-7 has been shown to produce reliable and valid scores in community studies, and using a cutoff score of 10 has been shown to result in sensitivity of 89% and a specificity of 82% (Hinz et al., 2017). The reliability of the summative scale in the current sample was excellent ( $M = .23$ ,  $SD = .27$ ,  $\alpha = .96$ ).

**Anxiety about the COVID pandemic** (2021 sample only) was measured with a single question: “How anxious are you about the coronavirus COVID-19 pandemic?” Participants were provided with a slider (electronic visual analogue scale) to indicate their degree of anxiety, with 0 and 100 at the left- and right-hand extremes, respectively. This produced continuous scores ranging from 0 to 100, with higher scores reflecting higher levels of self-reported COVID-19-related anxiety ( $M = .50$ ,  $SD = .28$ ).

## Analysis plan

The analysis plan was identical for both samples. We first report the results of confirmatory factor analyses (CFA) conducted in Mplus (Muthén & Muthén, 2013) with robust maximum likelihood estimation (MLR; Yuan & Bentler, 2000), comparing a two-factor model of Brexit identities (Leave vs. Remain) in which the factors were allowed to correlate relative to a one-factor model in which Leave and Remain were opposite ends of a unidimensional latent factor. We used the following criteria to assess model fit (Hu & Bentler, 1998, 1999): A low chi-square value, Comparative Fit Index (CFI; Bentler, 1990) values, and Tucker Lewis Index (TLI; Tucker & Lewis, 1973) values above .95 are indicative of excellent fit, whereas values above .90 reflect acceptable fit; root mean square error of approximation with 90% confidence intervals (RMSEA 90% CI; Steiger, 1990) with values of .06 or less reflect excellent fit, whereas values less than .08 reflect acceptable fit. The Bayesian Information Criterion (BIC; Schwarz, 1978) was used to evaluate and compare models, with the smallest value indicating the best-fitting model. In relation to the BIC, Raftery (1996) suggested that a 2–6-point difference offers evidence of model superiority, a 6–10-point difference indicates strong evidence of model superiority, and a difference greater than 10 points indicates very strong evidence of model superiority.

We then report bivariate correlations between Leave and Remain identities and Brexit distress variables. In linear regression models, we examine how Brexit identities, independent of voting in the 2016 EU referendum, predicted Brexit distress. In the first step of each regression, we considered how (a) sociodemographic factors (e.g., age, gender, and education), (b) participants' prior mental health, and (c) current anxiety about the COVID-19 pandemic (2021 sample only) were associated with Brexit distress. In the second step, self-reported voting behavior in the 2016 EU referendum was entered as an additional covariate (in the 2019 sample: Voted

Leave=1, Voted Remain=0; in the 2021 sample, Remain serves as the reference category for two dummy variables: (1) Voted Leave, and (2) Did not/could not vote). Finally, a third model included Leave and Remain identity scales to the models. Hence, our strategy was to determine whether Brexit identities predicted distress *above and beyond* how individuals cast their vote in 2016, their prior mental health status and anxiety about the pandemic, and sociodemographic information.

Finally, structural equation models (SEMs) were estimated to test whether Brexit-related distress mediated the relationship between Brexit identities and clinical measures of depression (GAD-7) and anxiety (PHQ-9). These SEMs allowed us to incorporate measurement and structural components to investigate the indirect relationships between Remain or Leave identities and depression (in both samples) and anxiety (only in the 2021 sample).

## RESULTS

### 2019 Sample

The two-factor model of Brexit identity was a good fit to the data,  $\chi^2(8)=9.72$ , RMSEA = .020, CFI = .998, TLI = .997, BIC = 8379.03, whereas the one-factor model was not,  $\chi^2(9)=390.7$ , RMSEA = .279, CFI = .644, TLI = .407, BIC = 9325.49. Factor loadings for Leave identity varied between .86 and .93 and for Remain identity varied between .90 and .96. As expected, Leave ID and Remain ID factor scores were negatively correlated,  $r = -.54$ ,  $p < .001$ . When Leave and Remain voters in the 2016 EU referendum were compared, Leave voters were more likely to identify with other Leavers,  $t(542)=17.96$ ,  $p < .001$ , and Remain voters were more likely to identify with Remainers,  $t(542)=17.44$ ,  $p < .001$ . These results confirm that Leave and Remain were unique identities that formed in response to the issue of Brexit.

Bivariate correlations between each of the emotional distress items related to Brexit, as well as their summed scale, clinical depression, and Leave and Remain identity measures, are shown in the upper half of Table 1. All the Brexit distress variables were highly correlated with one another, ranging from a low of  $r = .36$  to a high of  $r = .83$ , and there were also significant correlations between the Brexit distress scale and clinical depression,  $r = .46$ . Remain identity was positively correlated with all four Brexit distress variables and modestly with clinical depression. However, despite a similarly modest association between Leave identity and depression, specific distress about Brexit was not strongly associated with Leave identity, and, indeed, the only statistically significant association, which was for Brexit-related anxiety, was negative.

Next, we conducted a series of ordinary least squares regression models with Brexit distress as the dependent variable. Beginning with the naïve model in which demographic indicators and past or current mental health treatment were included as predictors,  $F(4, 539)=21.27$ ,  $p < .001$ ,  $R^2 = .14$ , we find that younger (i.e., 18–34 years old;  $b = .14$ ,  $SE = .02$ ,  $p < .001$ ) and educated (i.e., postsecondary education;  $b = .06$ ,  $SE = .02$ ,  $p < .01$ ) participants were most likely to be distressed about Brexit, whereas those with no prior mental health treatment were less likely to report being distressed ( $b = -.13$ ,  $SE = .02$ ,  $p < .001$ ); gender was not statistically significant (female:  $b = .02$ ,  $SE = .02$ ,  $p = .42$ ). Interestingly, adding voting to the model only slightly improved its fit,  $F(5, 538)=20.30$ ,  $p < .001$ ,  $R^2 = .16$ , with the effects of demographics remaining mostly unchanged; however, Leave voters were associated with less Brexit distress ( $b = -.09$ ,  $SE = .02$ ,  $p < .001$ ). Finally, when the two Brexit identity variables were included, the model fit improved considerably,  $F(7, 536)=34.64$ ,  $p < .001$ ,  $R^2 = .31$ . In this model, youth and prior mental health status were statistically significant predictors, but interestingly, voting in the 2016 EU referendum was no longer statistically significant ( $b = -.01$ ,  $SE = .03$ ,  $p = .61$ ). Most importantly, both Leave identity ( $b = .19$ ,  $SE = .04$ ,  $p < .001$ ) and Remain identity ( $b = .40$ ,  $SE = .04$ ,



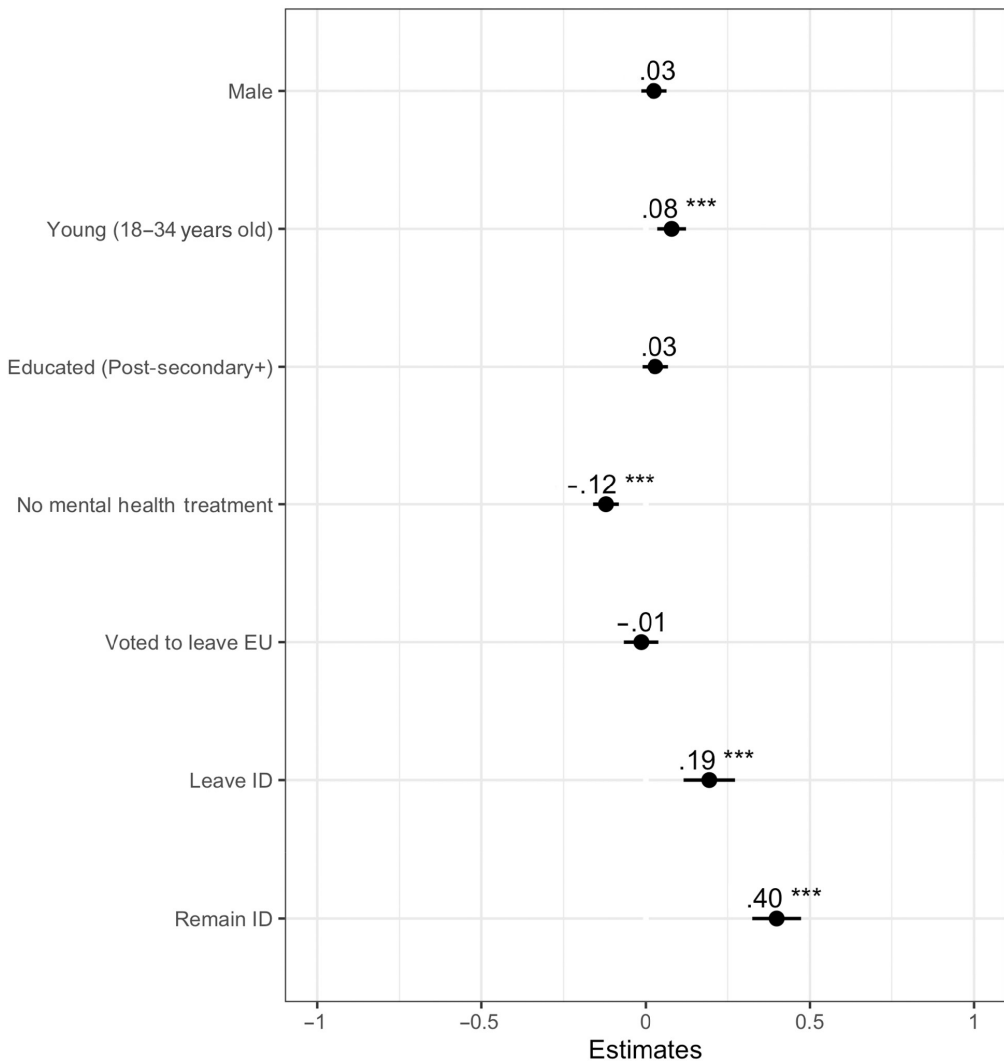
**TABLE 1** Pearson correlations between leave and remain identities, Brexit distress, and clinical levels of depression and anxiety.

	Scale: Leave ID	Scale: Remain ID	Brexit: Mental health	Brexit: Anxious	Brexit: Angry	Brexit: Distressed	Scale: Brexit distress	Scale: PHQ-9 (depression)	Scale: GAD-7 (anxiety)
<i>2019 Sample →</i>									
Leave ID	–	–.48	.01	–.16	.00	–.05	–.06	.12	–
Remain ID	–.42	–	.47	.48	.20	.45	.45	.15	–
Brexit: Mental health	–.02	.49	–	.79	.36	.80	.91	.55	–
Brexit: Anxious	–.18	.56	.83	–	.50	.83	.96	.44	–
Brexit: Angry	–.29	.58	.69	.79	–	.51	.71	.15	–
Brexit: Distressed	–.12	.55	.86	.87	.78	–	.96	.48	–
Scale: Brexit distress	–.16	.56	.97	.99	.92	.99	–	.46	–
PHQ-9 (depression)	.12	.11	.44	.39	.27	.41	.39	–	–
GAD-7 (anxiety)	.11	.12	.43	.40	.28	.42	.39	.90	–
<i>←2021 Sample</i>									

*Note:* Correlations above the diagonal are from the 2019 sample; those below are from the 2021 sample. The psych package in R computes a heterogenous correlation matrix consisting of Pearson product–moment correlations between continuous variables, polychorics for polytomous items, tetrachorics for dichotomous items, and polyserials for combinations of mixed variable types. Statistically significant correlations,  $p < .05$  (corrected for multiple tests using the BH adjustment (Benjamini & Hochberg, 1995)), are indicated in bold.

$p < .001$ ) were associated with statistically significant increases of Brexit distress, and these associated effects were large relative to other covariates. In other words, moving from weak to strong identification with Remainers was associated with a 40 percentage point increase in Brexit-related distress, whereas identification with Leavers had an effect size roughly half as large (i.e., a 19 percentage point increase in distress). The estimates from the fully saturated model are plotted in Figure 1 for quick visual comparison (as all variables have been scaled to range from 0 to 1). Because all predictors are scaled to range from 0 to 1, estimated effect sizes can be compared among the coefficients, and each predictor can be interpreted as the associated percentage point change in Brexit distress, given a one-unit increase in the respective predictor.

Finally, we estimated a full structural equation model to test the extent to which Brexit-related distress mediated the relationship between Leave and Remain identities and clinical depression. Given the ordinal natures of the measures, the SEM was estimated using diagonally weighted least squares (DWLS) in R with the lavaan package:  $\chi^2(129) = 271.70$ ,  $p < .001$ ,



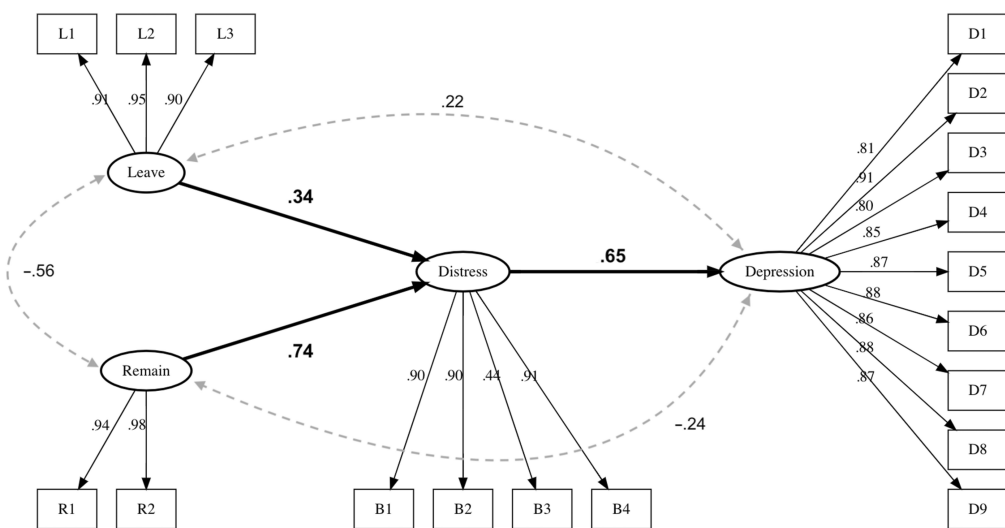
**FIGURE 1** Plot of OLS regression estimates on Brexit distress, 2019 sample. Dot-and-whisker plot showing OLS coefficients with 95% confidence intervals is from Model 3 in Table 2. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

RMSEA = .045, CFI = .998, TLI = .998. The SEM, which had excellent fit, is displayed in Figure 2, and it reveals that Leave and Remain identities are both positively associated with Brexit distress, as we previously demonstrated with the OLS regression models, and that Brexit distress mediates the relationship between Leave and Remain identities and a clinical measure of depression (PHQ-9). The figure demonstrates that the standardized path from Remain identity to distress is roughly three times that of Leave identity; yet both Brexit identities are associated with increases in distress, which, in turn, directly increases clinical depression. The indirect effect of Leave identity on depression is thus .22 ( $p < .001$ ) while the indirect effect of Remain identity on depression is .48 ( $p < .001$ ), which is more than double the former's standardized value. We take these results as strong evidence that both Leave and Remain identities are related to significant levels of poor mental health in the years following the 2016 EU referendum.

## 2021 Sample

Again, the two-factor model of the Brexit identity items was a good fit to the data,  $\chi^2(8) = 104.77$ , RMSEA = .068, CFI = .992, TLI = .988, BIC = 29060.23, whereas the one-factor model was not,  $\chi^2(9) = 5418.11$ , RMSEA = .513, CFI = .545, TLI = .317, BIC = 34373.58. Factor loadings on the Leave identity factor were all high, .86–.91, and the same was true for the Remain identity factor, .90–.96. Leave ID and Remain ID factor scores were again negatively correlated,  $r = -.48$ ,  $p < .001$ . When Leave and Remain voters in the 2016 EU referendum were compared, Leave voters were more likely to identify with other Leavers,  $t(1,698) = 28.887$ ,  $p < .001$ , and Remain voters were more likely to identify with Remainers,  $t(1,698) = 28.713$ ,  $p < .001$ .

Bivariate correlations between the two identities and distress variables are shown in the lower half of Table 1. In most respects, the findings replicate those from the 2019 sample. However, a notable difference is that in this sample, Leave identity is modestly *negatively* correlated with the distress variables, although, as in 2019, there is a modest positive association with depression and generalized anxiety.



**FIGURE 2** Structural equation model showing how Brexit distress mediates the relationship between leave and remain identities and clinical measures of depression, 2019 sample. Estimated using diagonally weighted least squares in R with the lavaan package:  $\chi^2(129) = 271.69$ ,  $p < .001$ , RMSEA = .045, CFI = .998, TLI = .998. All paths are standardized and statistically significant,  $p < .001$ ; residual covariances are denoted by dashed lines. Indirect effect of Leave identity on depression: .22,  $p < .001$ ; Remain identity on depression: .48,  $p < .001$ .

In the right half of Table 2, we report estimates from three OLS regression models, in which Brexit distress is the outcome. Column 4 displays estimates from the naïve model,  $F(9, 2052) = 89.19$ ,  $p < .001$ ,  $R^2 = .18$ , containing demographic variables (gender, age, and education), COVID-19 anxiety, and prior mental health treatment. Younger (i.e., 18–34 years old;  $b = .13$ ,  $SE = .01$ ,  $p < .001$ ), educated (i.e., postsecondary education;  $b = .06$ ,  $SE = .01$ ,  $p < .001$ ), male ( $b = .04$ ,  $SE = .01$ ,  $p < .01$ ) participants, as well as those most anxious about the pandemic ( $b = .26$ ,  $SE = .02$ ,  $p < .001$ ), were associated with increases in Brexit distress; those with no prior mental health treatment were less likely to report distress from Brexit ( $b = -.13$ ,  $SE = .01$ ,  $p < .001$ ). Recall that as all predictors are scaled to range from 0 to 1, estimated effect sizes can be compared among the coefficients, and each predictor can be interpreted as the associated percentage point change in Brexit distress, given a one-unit increase in the respective predictor.

Adding voting history improved the model fit,  $F(7, 2050) = 96.50$ ,  $p < .001$ ,  $R^2 = .26$ ;  $R^2_{\text{change}} = .07$ . In Model 2, all predictors from Model 1 remained statistically significant, though their associated effects were slightly attenuated. In addition, there was a statistically significant decrease in levels of Brexit distress for voting to leave in the EU referendum ( $b = -.17$ ,  $SE = .01$ ,  $p < .001$ ), relative to those who voted to remain, as well as for those who abstained or were ineligible to vote ( $b = -.06$ ,  $SE = .02$ ,  $p < .001$ ).

In Model 3, the Brexit identity variables—Leave and Remain—considerably improved model fit,  $F(9, 2048) = 163.50$ ,  $p < .001$ ,  $R^2 = .42$ ;  $R^2_{\text{change}} = .17$ . Once again, the inclusion of these predictors attenuated the associated influence of the previous variables on Brexit distress, though the sign of their impact remained unchanged. For instance, the associated effect of voting history on Brexit distress decreased from  $-.17$  to just  $-.04$  (on a 0 to 1 scale), which corresponds to a 76% reduction in its estimated size. Moreover, Leave and Remain identities were both associated with large and statistically significant *increases* in Brexit distress (Remain:  $b = .51$ ,  $SE = .02$ ,  $p < .001$ ; Leave:  $b = .08$ ,  $SE = .02$ ,  $p < .001$ ). In other words, moving from minimum to maximum levels of Remain identity increases levels of Brexit distress by nearly half of its full scale (i.e., 51 percentage points), whereas Leave identity is associated with a smaller increase of 8 percentage points. The estimates from Model 3 are plotted for visual inspection and direct comparison in Figure 3.

Finally, we estimated a full structural equation model to test whether Brexit distress mediated the relationship between Leave and Remain identities and clinical measures of depression (PHQ-9) and anxiety (GAD-7). Given the ordinal natures of the measures, the SEM was estimated using diagonally weighted least squares (DWLS) in R with the lavaan package:  $\chi^2(289) = 1916.91$ ,  $p < .001$ , RMSEA = .052, CFI = .998, TLI = .998. The SEM displayed in Figure 4 reveals that Leave and Remain identities are both positively associated with Brexit distress, as we have previously demonstrated, and that Brexit distress once again mediates the relationship between Leave and Remain identities and clinical measures of depression and anxiety. In this case, the standardized estimate of distress for Remain identity is approximately 4.5 times that of Leave; yet they both significantly impact Brexit-related distress, which is directly associated with increases in depression and anxiety. Moreover, the indirect effects of Leave identity on depression and anxiety are .11 ( $p < .001$ ) and .10 ( $p < .001$ ), respectively; in contrast, the indirect effects of Remain identity on depression and anxiety are .48 ( $p < .001$ ) and .47 ( $p < .001$ ), respectively. Again, these indirect effects of Remain identity on clinical measures of poor mental health are more than four times the size of those associated with Leave identity.

## DISCUSSION

Our evidence suggests that on two occasions separated by more than two years—the first during which there was ongoing parliamentary debate about running a second “people’s vote” and

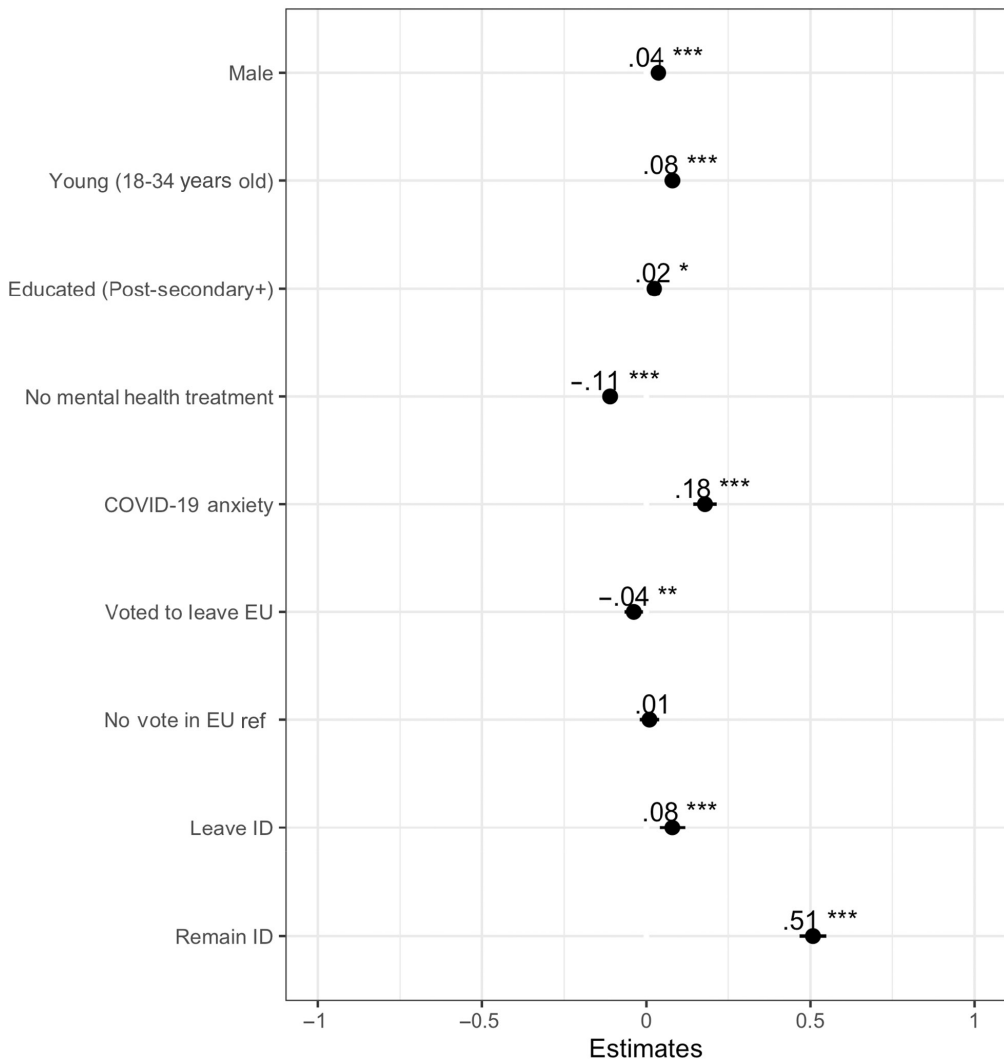
**TABLE 2** Estimates from ordinary least squares regression models on Brexit distress, 2019 and 2021 UK samples.

Predictors	Outcome: Brexit distress					
	2019 Sample			2021 Sample		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Intercept	.42*** (.38, .47) (.02)	.47*** (.42, .53) (.03)	.17*** (.10, .24) (.04)	.25*** (.21, .28) (.02)	.35*** (.31, .38) (.02)	.03 (-.01, .07) (.02)
Male (Ref: Female)	.02 (-.03, .06) (.02)	.03 (-.01, .07) (.02)	.03 (-.01, .06) (.02)	.04** (.01, .06) (.01)	.04** (.01, .06) (.01)	.04*** (.02, .06) (.01)
Young (<34 yrs.) (Ref: 35 yrs. or older)	.14*** (.09, .19) (.02)	.12*** (.08, .17) (.02)	.08*** (.04, .12) (.02)	.13*** (.10, .15) (.01)	.10*** (.07, .13) (.01)	.08*** (.06, .10) (.01)
Educated (postsecondary+) (Ref: High school or less)	.06** (.02, .11) (.02)	.05* (.00, .09) (.02)	.03 (-.01, .07) (.02)	.06*** (.04, .08) (.01)	.04*** (.02, .07) (.01)	.02* (.00, .04) (.01)
No mental health treatment (Ref: MH treat]	-.13*** (-.17, -.08) (.02)	-.12*** (-.16, -.08) (.02)	-.12*** (-.16, -.08) (.02)	-.13*** (-.15, -.10) (.01)	-.12*** (-.15, -.10) (.01)	-.11*** (-.13, -.09) (.01)
COVID-19 anxiety	–	–	–	.26*** (.22, .30) (.02)	.25*** (.21, .29) (.02)	.18*** (.14, .22) (.02)
Voted to leave EU	–	-.09*** (-.13, -.04) (.02)	-.01 (-.07, .04) (.03)	–	-.17*** (-.20, -.15) (.01)	-.04** (-.07, -.01) (.01)
No vote in EU ref.	–	–	–	–	-.06*** (-.09, -.02) (.02)	.01 (-.02, .04) (.02)
Leave ID	–	–	.19*** (.12, .27) (.04)	–	–	.08*** (.04, .12) (.02)
Remain ID	–	–	.40*** (.32, .47) (.04)	–	–	.51*** (.47, .55) (.02)
<i>N</i>	544	544	544	2,058	2,058	2,058
<i>R</i> <sup>2</sup>	.14	.16	.31	.18	.25	.42

Note: Cell entries are estimates from OLS regression models: (a) slope coefficients, (b) 95% confidence intervals, and (c) standard errors.

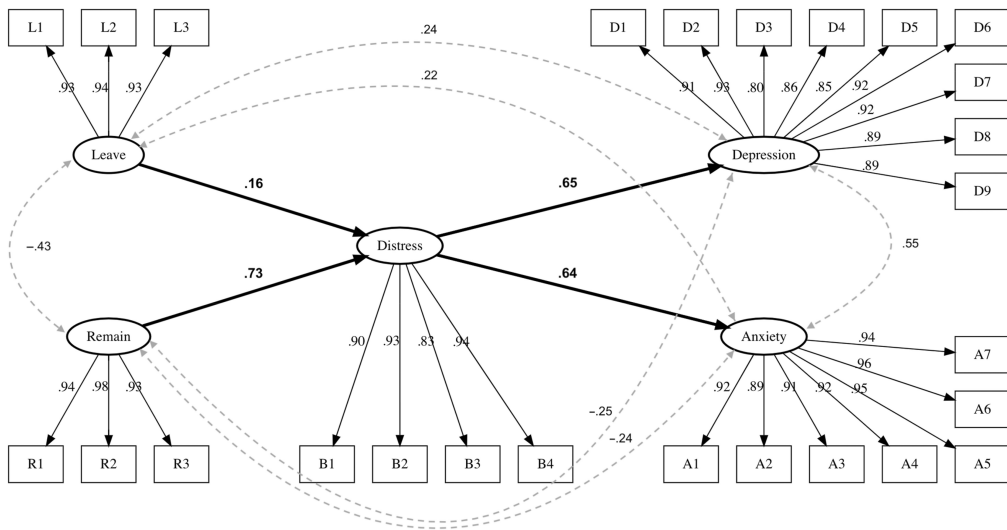
\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

potentially annulling the results of the 2016 EU referendum, the second more than half a year after the United Kingdom had officially left the European Union—events surrounding the Brexit process were associated with British citizens' considerable distress. On both occasions, there was evidence that two clear identities, Leavers and Remainers, had been formed within the British population. An important feature of our research was that we measured these identities in terms of the feeling of belonging to social groups of like-minded individuals, rather than in terms of attitudes toward the political process of Brexit. Our approach is consistent with the psychological literature on social identities, in which they are considered to be the consequence of a process of self-categorization (Turner & Reynolds, 2010). The findings from our confirmatory factor analysis are also consistent with this conception and confirm that the Brexit process has led to the formation of novel social identities (Hobolt et al., 2018).



**FIGURE 3** Plot of OLS regression estimates on Brexit distress, 2021 sample. Dot-and-whisker plot showing OLS coefficients with 95% confidence intervals is from Model 3 in Table 2. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

A substantial social and clinical psychology literature argues that strong and multiple identities can promote self-esteem, physical health (Jetten et al., 2015), and resilience to adverse mental health outcomes such as depression and paranoia (McIntyre et al., 2018), so that membership of social groups and other social identity resources has been described as a “social cure” (Jetten et al., 2009). However, other scholars have demonstrated that situational threats to a valued group identity can have negative physiological consequences (e.g., higher levels of stress hormone and anomalous cardiovascular reactions; see Eliezer et al., 2010; Townsend et al., 2011). In addition, political psychologists have cautioned that the formation of political identities can lead to negative consequences such as affective polarization and excessive partisanship (Greene, 1999, 2004; Huddy & Bankert, 2017; Iyengar et al., 2012; Mason, 2018). Our findings are consistent with this latter analysis and show that the novel Brexit identities were stronger predictors of distress about Brexit-related events than mere voting behavior in the 2016 EU referendum. Indeed, for our analyses conducted with different samples, the effect of actual voting behavior was relatively small, and in some cases nonsignificant, when Leave



**FIGURE 4** Structural equation model showing how Brexit distress mediates the relationship between leave and remain identities and clinical measures of depression and anxiety, 2021 sample. Estimated using diagonally weighted least squares in R with the lavaan package:  $\chi^2(289) = 1916.91$ ,  $p < .001$ , RMSEA = .052, CFI = .998, TLI = .998. All paths are standardized and statistically significant,  $p < .001$ ; residual covariances are denoted by dashed lines. Indirect effect of Leave identity on depression: .11,  $p < .001$ , and anxiety: .10,  $p < .001$ ; Remain identity on depression: .48,  $p < .001$ , and anxiety: .47,  $p < .001$ .

and Remain identities were considered. These findings are therefore consistent with previous research that has shown increased mental distress in the United Kingdom following the 2016 EU referendum (Powdthavee et al., 2019), and that a deterioration in the well-being of UK citizens was not matched by a deterioration in the well-being of citizens of countries unaffected by Brexit (Kavetsos et al., 2021). Moreover, our findings add to this prior work by demonstrating the importance of identity formation in this highly contentious political process.

One explanation of the mental health impact of Brexit identities concerns the way in which they affected individuals' reactions to Brexit-related events following the referendum, which rarely satisfied strongly committed members of the electorate on either side of the argument. It is worth noting that the impact of identities on distress with respect to Brexit-related events was more marked in the case of Remain identity and, indeed, was absent in the case of Leave identity when bivariate correlations were considered. In many ways, this is not surprising and is in line with social identity theory; Leavers won the referendum and got the policies for which they voted, whereas Remainers did not. However, and perhaps remarkably, a different picture emerges when the impact of the novel identities on self-reported measures of clinical depression and anxiety are considered. In both data sets, the effect on psychiatric symptoms of a Leave or Remain identity was mediated by Brexit-related distress. The mediational effect was less evident with respect to Leave identity, which is not surprising as this kind of identity was also less associated with distress about Brexit-specific events.

Some important limitations of the present research should be noted. First, in contrast to the previous longitudinal studies by Powdthavee et al. (2019) and Kavetsos et al. (2021), we were only able to conduct cross-sectional analyses at the two time points for which we had data (the samples were not linked), which means that we must be cautious about drawing inferences about causality. Second, although sample recruitment was quota-based and stratified by UK Census benchmarks (e.g., age, gender, and household income), this approach is inferior to the random probability sampling employed, for example, in the UK Understanding Society survey. Moreover, the 2019 sample was relatively small and adventitiously obtained and, in the

2021 sample, Remain voters were overrepresented, probably due to attrition in the C19PRC longitudinal survey project from which they were drawn. However, the fact that the findings in 2021 so closely replicated those obtained in 2019 should increase confidence in the findings and, in particular, about the important role of social identities in psychological distress.

Our results have important theoretical and practical implications. From a theoretical perspective they show that political events can have an adverse effect on a population's mental health and that identity formation, which seems to be important in this process, does not always have benign consequences. Further research is required to understand this effect and determine when it happens. It has previously been observed that identities can provoke hostility to outgroups (Tajfel & Turner, 1979), and it is plausible that this is especially likely to happen when conflicting identities are created at the same time. Consistent with this analysis, Saville (2020) has shown that adverse mental health impacts are especially experienced when individuals find themselves surrounded by people whose attitude toward Brexit is at odds with their own. Moreover, our results suggest an important role for social identities captured by clinical measures, such as those for anxiety and depression, which may add new avenues regarding the sources and potential treatment of poor mental health.

From a practical perspective, politicians should, of course, consider the psychological consequences of their policies. At the time of writing, the United Kingdom remains a nation that is considerably divided about Brexit. Wise, astute political actors might consider how they can fashion policies that soothe polarized identities to promote social cohesion, the well-being of citizens, and future prosperity.

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