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ORIGINAL ARTICLE

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Can group-based strategies increase community resilience? Longitudinal predictors of sustained participation in Covid-19 mutual aid and community support groups

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Abstract

Mutual aid groups have been a critical part of the coronavirus disease-2019 (Covid-19) response and continue to address the needs of people in their communities. To understand how mutual aid and similar community support groups can be sustained over time, we test the idea that using group-based strategies initiates psychological trajectories that shape future participation. We conducted a preregistered longitudinal survey among Covid-19 mutual aid and community support volunteers in the United Kingdom ($n_{Wave\ 1} = 600$, May 2021; $n_{Wave\ 2} = 299$, July–August 2021) who were registered panelists of an independent research organization. Assessments included measures of group-based strategies, collective participation predictors, participation experience, and sustained participation. Volunteers engaged in a wide range of support activities including shopping, emotional support provision, and deliveries. Two group-based strategies—group alliances and group horizontality—longitudinally predicted sustained participation. In addition, sense of community responsibility and burnout were longitudinal predictors of sustained participation. Importantly, predictors of sustained participation diverged for volunteers with different levels of volunteering experience. Our findings highlight group-based strategies as a potential resource for organizers seeking to sustain participation. Use can be tailored depending on the profiles of individual Covid-19 mutual aid volunteers. These findings have significance beyond Covid-19 as they are relevant to sustaining community resilience more generally.

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1 | INTRODUCTION

Mutual aid groups have been critical to promoting community resilience as part of the coronavirus disease-2019 (Covid-19) response (Badger et al., 2022; Curtin et al., 2021; Drury et al., 2022; Mao, Fernandes-Jesus, et al., 2021), a fact recognized by government (e.g., HM Government, 2020). In many countries, mutual aid and community support groups enabled members of the public to self-isolate and shield, provided for practical (e.g., shopping), financial (e.g., running foodbanks), informational (e.g., available public services), and well-being (e.g., telephone hotline) needs, and encouraged public health behaviors such as vaccine uptake (Costello, 2021; Curtin et al., 2021; Mao, Fernandes-Jesus, et al., 2021; Mao, Drury, et al., 2021; O'Dwyer et al., 2022; Pleyers, 2020; Sitrin & Sembrar, 2020; SPI-B, 2020; Tiratelli & Kaye, 2020). These groups can be considered a type of "altruistic community" (Barton, 1969) that commonly arises in the wake of disasters, but whose existence is typically not long-lasting (Kaniasty & Urbańska, in press; Ntontis et al., 2020a). Indeed, in the Covid-19 pandemic, the initial outpouring of helping behaviors and solidarity declined rapidly after the first 2 months (Ntontis et al., 2022; Tiratelli & Kaye, 2020), exactly in line with other disasters (Kaniasty & Urbańska, in press). Public needs for support, however, remained high during this period of decline, with high rates of infection in autumn 2020, and winter 2020–2021 (e.g., Independent SAGE, 2020), and will likely persist in the foreseeable future as new variants emerge (Drury et al., 2022). Therefore, to enhance community resilience during the Covid-19 pandemic and beyond, it is crucial to understand how these mutual aid and community support groups can be sustained over time. In addition to needing basic resources (e.g., relationships of trust with local communities, donations) to operate (Fernandes-Jesus et al., 2021), these groups need to retain volunteers and sustain levels of involvement. Recently, Fernandes-Jesus et al. (2021) identified a number of conscious strategies used by organizers of mutual aid and community support groups during the Covid-19 pandemic, involving different activities to maintain volunteers' engagement in the group. The next step for social scientists and for these groups themselves is to understand which of these group-based strategies work best and *how* they work. Much existing research on participation in voluntary groups, community engagement, and collective action has focused on psychological predictors (e.g., social identification) of (continued) participation (e.g., Stevenson et al., 2021; Van Zomeren et al., 2008; Wakefield et al., 2022). In this paper, co-produced by people directly involved in Covid-19 community support groups, we examine support groups' use of group-based strategies—actions aimed at enhancing commitment to the group—which we suggest initiate psychological trajectories that shape future participation. We test our ideas with a longitudinal panel survey of UK community support volunteers during the Covid-19 pandemic.

1.1 | The rise and importance of community support groups during the COVID-19 pandemic

For many, responding to the Covid-19 pandemic led to significant challenges including self-isolation, shielding, financial hardships, and mental health (e.g., Social Metrics Commission, 2020). Many countries provide no comprehensive support for difficult mitigation measures such as self-isolation (Patel et al., 2021). The needs of communities therefore often extended beyond the capacity (or willingness) of government and third-sector organizations. In response, local informal support groups arose, providing wide-ranging essential support (Curtin et al., 2021; Rendall et al., 2022). In the United Kingdom, over 4000 such "mutual aid" groups sprang up at the start of the pandemic (Tiratelli & Kaye, 2020). Henceforth, we use the term "Covid-19 mutual aid groups" to refer to all informal groups that provided local community support during the Covid-19 pandemic, whether these groups existed prepandemic (and repurposed) or formed during the pandemic (Curtin et al., 2021; Mao, Fernandes-Jesus, et al., 2021). Many community support groups were still active more than 2 years later (We're Right Here, 2022) and had diversified into other areas, including helping the homeless, community gardening, and sharing food (Drury et al., 2022; Lang, 2021).

While helping behaviors often increase when communities are affected by disasters (Drury et al., 2019; Ntontis et al., 2020b), these forms of support tend to decrease over time (Kaniasty & Urbańska, in press). According to Kaniasty and Urbańska (in press), this decrease likely occurs because in the postdisaster period those affected need to support themselves such that continued engagement with helping others is not sustainable. Other reasons for the decline in support following an emergency include changes in people's identities, the absence of a social context conducive to communities emerging, and postdisaster inequalities in terms of how different social groups are treated (Ntontis et al., 2020a). In addition, there may be a lack of recognition of collective community efforts by authorities and the visibility and legitimacy that this brings (Stallings & Quarantelli, 1985).

Given the persistence of community need for support during the Covid-19 pandemic (Badger et al., 2022; Drury et al., 2022; Independent SAGE, 2020) and their likely extension into the near future (We're Right Here, 2022), it is important to understand how Covid-19 mutual aid groups can sustain participation over time. Previous research suggests that factors such as social identification, perceptions of social support, efficacy, and well-being likely shape future participation and engagement in Covid-19 community support (Bowe et al., 2020, 2021; Cocking et al., 2023; Fernandes-Jesus et al., 2021; Gray & Stevenson, 2020; Ntontis et al., 2020a; Stevenson et al., 2021; Vignoles et al., 2021). However, what has only briefly been examined previously is the role of group organizers' actions to retain membership and maintain participation following the initial surge of support (Fernandes-Jesus et al., 2021; Ntontis et al., 2020a). For both practical reasons (advising Covid-19 mutual aid groups on "what works" for sustaining community support) and theoretical reasons (understanding the dynamics of postdisaster community support groups), it is important to identify whether the different strategies employed by groups/organizers influence volunteers' participation during the Covid-19 pandemic and beyond, and the

psychological mechanisms underlying this process. The significance of this question goes beyond Covid-19 and is relevant to the broader problem of building and maintaining community resilience, where "spontaneous volunteers" have always outnumbered established voluntary group members (HM Government, 2019).

1.2 | Can group-based strategies sustain community support?

Groups that provide support in the face of disaster use a range of strategies to sustain participation (Fernandes-Jesus et al., 2021; Ntontis et al., 2020a; Tekin & Drury, 2021). In interviews with 32 organizers of UK Covid-19 mutual aid groups, Fernandes-Jesus et al. (2021) showed that organizers pursued community-based alliances and created a culture of care that supported group volunteers (e.g., equal distribution of work, emotional support, and assistance with the management of practical tasks). These findings are in line with existing literature on social capital, which points to the benefits of bonding social capital (i.e., strong bonds between people who belong to the same group), bridging social capital (i.e., strong connections between people from different groups), and linking social capital (i.e., strong bonds between a group and other organizations) for community resilience in extreme events (Aldrich, 2017; Aldrich & Meyer, 2015). In addition, organizers arranged social events, kept regular open communication, and used a horizontal group structure to make decisions. All of these factors were thought to work by engaging volunteers psychologically in the group process (Fernandes-Jesus et al., 2021). In the same vein, interviews with people affected by a flood found that some community members held commemoration events in an attempt to sustain the sense of community (Ntontis et al., 2020a). Together, the above findings suggest that organizers actively use various group-based strategies that can shape sustained participation in Covid-19 mutual aid groups. The current research builds on these findings to test which group-based strategies best sustain participation, and through which mechanisms. We propose that group-based strategies shape key collective participation predictors (such as group identity), which in turn influence relevant experiential variables (such as well-being), leading to continued participation. Below, we detail the interconnections between these sets of variables.

1.3 | Do group-based strategies initiate psychological trajectories that shape sustained participation?

Organizers' use of group-based strategies potentially influences factors such as volunteers' social identification and perceived social support (Fernandes-Jesus et al., 2021; Gulliver et al., 2023). Shared identification—perceiving others in the group in terms of "us"—is a key determinant of participation in collective behavior (Drury & Reicher, 2020). For example, in an interview study, UK volunteers who identified with their volunteering group showed identity-based helping commitment (Gray & Stevenson, 2020). Also, group identity is a consistent predictor of collective action participation (van Zomeren et al., 2008). In the same vein, theory suggests that people's sense of community and community responsibility shape community engagement (Nowell & Boyd, 2010). In addition, perceived social support is key to understanding participation in coordinated action following a disaster (Drury et al., 2016) and can contribute to collective action intentions (van Zomeren, Leach, et al., 2012). Finally, injustice perceptions are a potential motivator for some Covid-19 mutual aid volunteers (Mao, Drury, et al., 2021).

Group-based strategies can also potentially shape people's experience of participation which itself can impact sustained participation. For example, organizers' care provision strategies motivated volunteers and potentially shaped positive affective experiences such as happiness and pride (Fernandes-Jesus et al., 2021). Affective experiences, group efficacy (van Zomeren, 2013) and burnout (Chen & Gorski, 2015) can all predict collective participation.

Evidence suggests that collective participation predictors may operate via participation experience (Bowe et al., 2020; Canto & Vallejo-Martín, 2021; O'Dwyer et al., 2021). For example, community identification and social support serially mediated the association between volunteering hours and well-being in a sample of 529 community volunteers (Bowe et al., 2020).

Our knowledge relating to trajectories of participation in Covid-19 mutual aid groups is largely based on qualitative (Cocking et al., 2023; Fernandes-Jesus et al., 2021; Mao, Drury, et al., 2021), cross-sectional (O'Dwyer et al., 2021), or relatively small-scale longitudinal (Wakefield et al., 2022) studies. Crucially, none of these studies has looked at the role of group-based strategies—what organizers actually do—over time. The current study will thus provide large-scale longitudinal evidence concerning trajectories of participation triggered by group-based strategies.

1.4 | The current study

To increase community resilience during the Covid-19 pandemic and beyond, it is crucial to understand how to sustain UK Covid-19 mutual aid groups (Drury et al., 2022; We're Right Here, 2022). Our theoretical framework (Figure 1) outlines three sequential sets of variables that could predict sustained participation in Covid-19 mutual aid groups. Organizers of Covid-19 mutual aid groups view group-based strategies as conductive to people's group identification, well-being, and future participation (Fernandes-Jesus et al., 2021); and collective participation predictors (such as identification and support) can shape participation experiences (such as efficacy and affect) (Canto & Vallejo-Martín, 2021; Jetten et al., 2012; O'Dwyer et al., 2021) and intentions to participate (Keshavarzi et al., 2021). Accordingly, the overall prediction is that strategy variables predict collective participation variables which predict experiences of participation and in turn predict sustained participation. Additional direct pathways in our model are between group-based strategies and (1) participation experience, and (2) sustained participation, and between collective participation predictors and sustained participation.

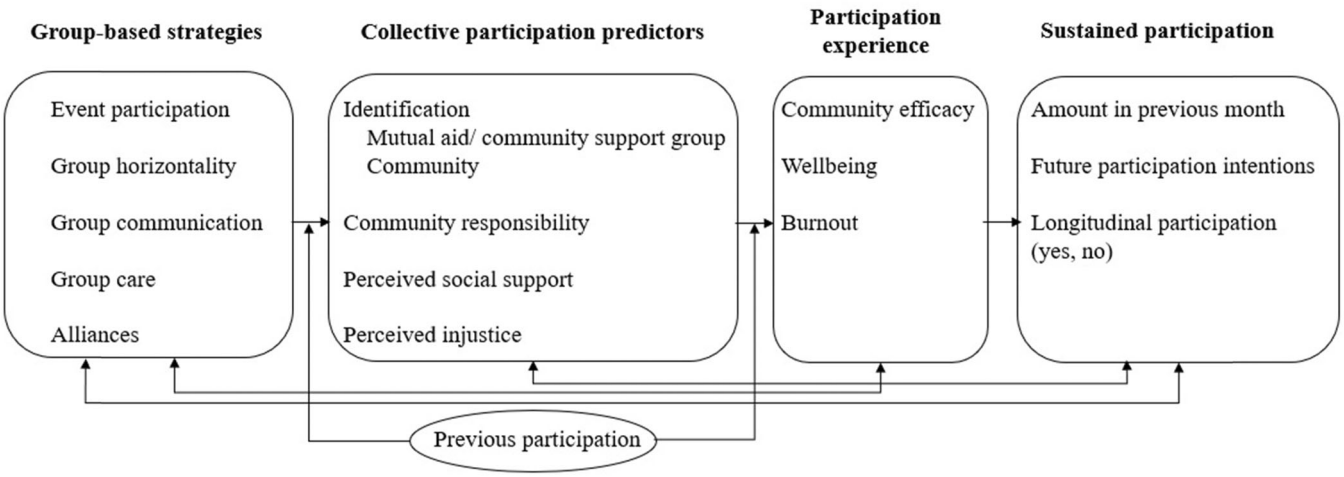

FIGURE 1 Theoretical framework.

Covid-19 mutual aid groups attracted a new generation of volunteers (Power & Benton, 2021), and so it is important to understand whether volunteers with different demographic characteristics have different needs. We predict that those who have experience of previous volunteering or campaigning will need less in the way of strategies and positive experiences to sustain them, since they will have the identity resources to contextualize and cope with participation-related stressors (Barr & Drury, 2009). Accordingly, we expect that previous participation experience (Bowe et al., 2020) will moderate the associations between (1) group-based strategies and collective participation predictors, and (2) collective participation predictors and participation experience. These hypotheses are summarized in Figure 1.

Because we do not know which variables under each theme (strategy, collective participation, experiences) are the most important in predicting sustained participation, we will explore whether previous participation moderates all pathways in our model. Our cross-lagged analytic strategy enables us to test multiple causal relationships (Selig & Little, 2012), which in turn will guide any subsequent mediation analyses extrapolated from the model.

We tested our theoretical framework using data obtained in a two-wave survey among Covid-19 mutual aid and community support volunteers. This investigation, co-produced with organizers of Covid-19 mutual aid groups, is intended to promote knowledge concerning avenues for sustained participation in Covid-19 mutual aid groups, and therefore to enhance a long-term community response during Covid-19 and beyond.

2 | METHODS

2.1 | Participants

Participants were 600 UK residents who had taken part in community groups to support people locally during the Covid-19 pandemic. At Wave 1, participants were aged 18–75 (M_{age} = 45.41, SD_{age} = 15.86), 50% female, 45% employed full-time, 47% middle class, 38% educated to NVQ4/HNC/HND/Bachelor's degree or similar, and 84% reported White as their ethnic group. Participants were registered panelists of an independent research organization commissioned for this project (Ipsos), which applied multiple prescreen (e.g., based on number of surveys completed by respondent) and postcompletion (e.g., straight-line response pattern) rules to ensure data quality. These procedures led to the exclusion of 1.5% (Wave 1) and 2.3% (Wave 2) of the respondents. As the profile of the target sample was unknown, data were weighted to the known offline nationally representative population proportions for age and working status within gender and region.

2.2 | Design and procedure

This was an online longitudinal study (preregistration: https://osf.io/nfc5p). Potential participants were invited via email to take part in Wave 1 (n = 600; May 2021), at the end of which consent to be re-contacted in Wave 2 (n = 299; July–August 2021) was sought. Sample size for our mediation model was based on the recommendation of at least 100 or 200 participants to obtain a minimum statistical power (0.80) (Boomsma, 1982).

2.3 | Measures

Below are all measures in our framework and several measures included for exploratory and descriptive purposes. Each scale was evaluated by exploring the correlation matrix and confirmatory factor analyses. Items that had a small or reverse (contrary to expectation) correlation were removed. A composite score per construct was computed based on nonmissing scale ratings (e.g., excluding responses such as "don't know"). Interitem reliability and rating scales for our core measures are reported in Table 1. Additional information about the measures including all item wordings is

TABLE 1 Means, standard deviations, interitem reliability, and correlations at Wave 1 and Wave 2.

	Wave 1 M (SD)	Wave 2	Scale	Cronbach's α W1	Cronbach's α W2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Event participation[a]	3.74 (3.51)	4.04 (3.41)		.81	.76	--	−0.02	0.06	0.08	0.05	.06	.19*	0.18*	0.07	−0.23*	−0.09	0.14**	0.13**	0.54*	0.54*	0.09	0.44*	0.53*	0.18*	0.36*
2. Group horizontality	3.09 (1.63)	3.07 (1.65)	1–7		na	0.11**	--	−0.17*	−0.12	−0.13**	−0.13**	−0.15**	−0.17*	−0.09	0.07	0.02	−0.15**	−0.11	−0.16*	−0.21*	−0.26*	−0.05	−0.12**	0.04	−0.05
3. Group communi-cation	5.48 (1.21)	5.48 (1.28)	1–7	.84	.82	0.13*	−0.10**	--	0.80*	0.39*	0.63*	0.60*	0.51*	0.58*	−0.03	−0.10	0.62*	0.63*	−0.09	−0.09	0.54*	0.20*	0.02	0.46*	−0.07
4. Group care	5.46 (1.23)	5.39 (1.27)	1–7	.84	.85	0.13*	−0.08	0.80*	--	0.48*	0.62*	0.53*	0.47*	0.61*	−0.01	−0.06	0.52*	0.64*	−0.02	−0.10	0.57*	0.22*	0.05	0.45*	−0.06
5. Alliances	3.88 (1.16)	3.74 (1.21)	1–5	.79	.84	−0.06	−0.16*	0.23*	0.29*	--	0.32*	0.34*	0.28*	0.33*	−0.05	−0.05	0.26*	0.39*	0.09	0.04	0.40*	0.18*	0.14**	0.24*	−0.00
6. Group identification	5.35 (1.38)	5.40 (1.44)	1–7		na	0.17*	−0.08	0.56*	0.54*	0.20*	--	0.59*	0.51*	0.52*	−0.02	−0.09	0.52*	0.55*	−0.12**	−0.10	0.61*	0.20*	0.01	0.49*	−0.02
7. Community identification	5.14 (1.44)	5.36 (1.40)	1–7		na	0.17*	−0.07	0.54*	0.55*	0.15*	0.47*	--	0.57*	0.69*	−0.06	−0.07	0.71*	0.59*	0.03	0.03	0.58*	0.28*	0.12**	0.53*	−0.04
8. Community responsibility	5.00 (1.12)	5.17 (1.09)	1–7	.89	.89	0.27*	−0.10**	0.44*	0.44*	0.16*	0.43*	0.54*	--	0.52*	−0.12**	−0.17*	0.55*	0.56*	0.13**	0.12**	0.46*	0.34*	0.21*	0.58*	0.15**
9. Perceived social support	3.85 (0.89)	3.95 (0.89)	1–5	.80	.82	0.13*	−0.05	0.53*	0.55*	0.22*	0.43*	0.59*	0.50*	--	−0.04	−0.16*	0.68*	0.62*	0.04	−0.07	0.57*	0.36*	0.11	0.44*	−0.09
10. Perceived injustice support	3.44 (0.79)	3.41 (0.90)	1–5	.78	.86	−0.13*	−0.11*	0.11*	0.08**	0.03	0.05	−0.00	−0.02	0.02	--	0.51*	−0.09	−0.01	−0.30*	−0.28*	−0.11	−0.19*	−0.19*	−0.04	−0.26*
11. Perceived government injustice[b]	1.44 (0.47)	1.48 (0.48)		.79	.75	−0.06	−0.10**	−0.04	−0.03	−0.02	−0.09**	−0.05	−0.12*	−0.06	0.55*	--	−0.15**	−0.12**	−0.10	−0.14**	−0.12**	−0.19*	−0.02	−0.16*	−0.12
12. Community efficacy	5.12 (1.26)	5.26 (1.23)	1–7	.85	.86	0.13*	−0.11*	0.55*	0.55*	0.14*	0.47*	0.65*	0.53*	0.59*	−0.04	−0.13*	--	0.58*	0.03	0.04	0.59*	0.27*	0.10	0.51*	0.01
13. Positive affect	3.74 (0.83)	3.77 (0.87)	1–5	.85	.87	0.23*	−0.06	0.56*	0.54*	0.17*	0.51*	0.48*	0.51*	0.47*	−0.01	−0.06	0.50*	--	0.07	0.01	0.55*	0.30*	0.12**	0.49*	0.03
14. Negative affect	2.04 (1.12)	2.08 (1.18)	1–5	.92	.92	0.43*	−0.14*	−0.11*	−0.12*	0.00	−0.11*	−0.04	0.07	−0.01	−0.24*	−0.04	−0.06	0.10**	--	0.74*	0.14**	0.45*	0.68*	0.02	0.41*
15. Burnout	3.17 (1.68)	3.33 (1.72)	1–7	.75	.80	0.41*	−0.17*	−0.12*	−0.16*	−0.03	−0.09**	−0.04	0.12*	−0.09**	−0.17*	−0.02	−0.07	0.08	0.67*	--	0.10	0.42*	0.56*	0.02	0.41*
16. Group efficacy	5.02 (0.87)	5.02 (0.96)	1–7	.87	.87	0.16*	−0.23*	0.43*	0.45*	0.26*	0.57*	0.36*	0.37*	0.42*	0.01	−0.07	0.44*	0.36*	0.10**	0.06	--	0.33*	0.21*	0.39*	0.03
17. Community participation	2.92 (1.16)	3.09 (1.15)	1–5	.80	.78	0.45*	−0.04	0.18*	0.15*	0.09**	0.20*	0.31*	0.38*	0.24*	−0.13*	−.09**	0.20*	0.25*	0.38*	0.36*	0.19*	--	0.58*	0.31*	0.28*
18. Political participation	2.07 (1.28)	2.22 (1.37)	1–5	.87	.90	0.46*	−0.11**	−0.01	−0.03	0.01	−0.01	0.08**	0.18*	0.10**	−0.11*	0.04	0.04	0.12*	0.65*	0.53*	0.14*	0.54*	--	0.15**	0.38*

(Continues)

TABLE 1 (Continued)

	Wave 1 M (SD)	Wave 2	Scale	Cronbach's α W1	Cronbach's α W2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
19. Future participation intentions	5.32 (1.43)	5.46 (1.43)	1–7	.81	.79	0.15*	−0.04	0.43*	0.41*	0.15*	0.41*	0.50*	0.57*	0.41*	−0.05	−0.12*	0.50*	0.45*	−0.09**	−0.10**	0.30*	0.31*	0.03	--	0.19*
20. Amount of participation in the last month[c]	3.04 (1.74)	2.91 (1.73)		.69	.65	0.43*	−0.01	0.08**	0.05	0.00	0.06	0.15*	0.21*	0.09**	−0.21*	−0.06	0.11*	0.20*	0.42*	0.39*	0.09**	0.36*	0.40*	0.18*	--

Note: Across measures, higher scores across scales represent higher level of construct measured. Baseline correlations at Wave 1 are presented below the diagonal; correlations at Wave 2 are presented above the diagonal.

[a]Frequency scale ranging 0 (zero participation) through 1 (one event) and 10 (10 events) to 11 (>10).

[b]Rating based on selecting one statement out of each of two pairs of statements.

[c]Frequency scale ranging 1 (no time spent) to 8 (>35 h per week).

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

available via the study's preregistration. Across measures, a higher score indicates a higher level of the construct being assessed; one exception is group horizontality which was reverse-coded. The main themes and variables in our theoretical framework appear in the preregistration; the interconnections in the theoretical framework presented herein are more developed than in the preregistration.

2.3.1 | Group-based strategies

Event participation was assessed using two custom items evaluating the frequency of participation in (1) social events and (2) organizational meetings with others. *Group horizontality* was assessed using a single custom item ("Only a small number of those in the group participated in planning or decision-making" [reverse-coded]). *Group communication* was evaluated using three items adapted from the subscale openness scale (O'Reilly & Roberts, 1977) (e.g., "It was easy to communicate openly to all those in this group"). *Group care* was assessed using three custom items evaluating perceived group care (e.g., "People in the group showed that they cared for each other"). *Alliances* were evaluated using three custom items assessing how much the group interacted with (1) other community support or mutual aid groups, (2) charities or other existing voluntary organizations, and (3) public bodies (e.g., local council).

2.3.2 | Collective participation predictors

Group identification was assessed by a single item evaluating social identification (Postmes et al., 2013): "I identify with the community support group/mutual aid group." *Community identification* was assessed using a single item (Postmes et al., 2013) (i.e., "I identify with my local community"). *Community responsibility* was assessed using the 6-item Sense of Community Responsibility Scale (SCO-R, Prati et al., 2020). *Perceived social support* from the local community was assessed using four items adapted from Lin et al. (2019). *Perceived injustice* was assessed by two measures inspired by Saab et al. (2015). First, *perceived injustice support* was evaluated by asking participants to indicate if they felt the level of support provided by the UK government to people who are self-isolating during the pandemic was sufficient (three items). Second, *perceived government injustice* was evaluated by asking participants to select one statement out of each of two pairs presented (e.g., "the UK government is fair/unfair in the amount of support it is giving to people who are self-isolating").

2.3.3 | Participation experience

Community efficacy was assessed using three items adapted from Drury et al. (2016). Participants were asked to consider their local community as a reference and indicate whether the community could resolve the situation resulting from the pandemic. We

operationalized *well-being* using a 10-item self-report scale (I-PANAS-SF; Thompson, 2007) to evaluate the experience of *positive affect* (five items) and *negative affect* (five items) in relation to one's Covid-19 related mutual aid or community support group. *Burnout* was assessed using two items adapted from Haslam et al. (2018) that evaluated perceived exhaustion from the involvement with the group. *Group efficacy* of the Covid-19 mutual aid group was evaluated using three items adapted from van Zomeren, Postmes, et al. (2012); this exploratory variable was not part of our preregistered theoretical model.

Previous experience was assessed using seven items evaluating prepandemic participation experiences. Previous *community participation* was evaluated using four items adapted from Onyx and Bullen (2000). Previous *political participation* was assessed using three items adapted from the activism orientation scale (Corning & Myers, 2002).

2.3.4 | Sustained participation

We used three different measures of sustained participation. *Amount of participation in the last month* was evaluated using two items adapted from Bowe et al. (2020). Participants indicated how many hours they spent organizing or providing help to other community members during the last month. *Future participation intentions* were assessed using two custom items evaluating intentions for community-based participation. Participants rated the likelihood that they would contribute to a community support group or mutual aid group: (1) if there is a further pandemic wave in the next 6 months, and (2) for other purposes when the pandemic is over. *Longitudinal participation* was assessed as current involvement at Wave 2 (yes or no).

2.3.5 | Descriptive measures

Amount of participation during lockdown was evaluated using two items adapted from Bowe et al. (2020). Participants indicated how many hours they spent organizing or helping other community members during the first national UK lockdown (March–June 2020) on a 1 ("I did not spend any time during that period") to 8 (>35 h per week) scale. *Type of participation* was evaluated using 15 items assessing the frequency of various activities as part of a community support group or mutual aid group that arose in response to the Covid-19 pandemic (1) in the past month on a 1 (every day) to 7 (never) scale [reverse coded]; and (2) during the first national lockdown on a 1 (every day) to 8 (never) scale [reverse coded]. Two items were adapted from Ohmer (2007) (e.g., "being involved in planning, decision-making and organization") and five items were adapted from Mak and Fancourt (2021) (e.g., "preparing meals for other people"). Eight items were created by us based on a previous qualitative study (e.g., "picking up prescriptions for someone," Fernandes-Jesus et al., 2021).

2.3.6 | Background variables

Sociodemographics measured were age, gender, ethnic group, area of residence, education, employment status, social grade. *Furlough status* since start of the pandemic was evaluated by a single item.

2.4 | Analytic approach

Our main analyses focused on three indexes of sustained participation. We performed autoregressive and cross-lagged structural equation modeling with observed variables (path analyses) using the lavaan package in R. Based on Cole and Maxwell (2003), cross-lagged models with a two-wave design have the strength to test hypotheses in models like the one proposed in this paper. Notwithstanding limitations such as the absence of a minimum of three measurements, this approach has the strength of facilitating the testing of complex hypotheses, controlling for a previous measurement point. The dependent variables for the modeling were: (1) future participation intentions, and (2) amount of participation in the last month. The two models were estimated using maximum likelihood estimation. Across models, the path analysis was a saturated model, which implies that the goodness of fit was not interpreted. The autoregressive paths were specified in the model to capture the stability of responses from Wave 1 to Wave 2. Given that, the cross-lagged coefficients could be interpreted to provide evidence for the hypotheses. To examine the moderation hypotheses, we estimated a multigroup model that compared those with low versus high levels of previous ([1] community, and [2] political) participation experience. We planned to evaluate our mediation hypotheses where applicable. Finally, we tested predictors of longitudinal participation via logistic regression.

3 | RESULTS

Sample characteristics are presented in Table 2. Volunteers engaged in a wide range of activities including shopping, emotional support provision, and deliveries. A repeated measures *t*-test showed that the amount of participation during the first lockdown was significantly higher in comparison to participation in the previous month at Wave 1 (i.e., April 2021), M (SD, *n*) = 3.30 (1.49, *n* = 593), 3.04 (1.73, *n* = 596), respectively, $t(590) = -3.84$, $p < .001$, and at Wave 2 (i.e., June–July 2021), M (SD, *n*) = 3.45 (1.39, *n* = 297), 2.91 (1.73, *n* = 299), $t(296) = -5.76$, $p < .001$.

To test for attrition bias, we ran a logistic regression ($n = 600$). The dependent variable was the probability of Wave 1 participants taking part in Wave 2 (dummy coded, 0 = no, 1 = yes). The independent variables were age, gender, and education. Age and NVQ5/postgraduate diploma education level positively predicted Wave 2 participation, $\beta = .02$, $p < .001$, $\beta = .71$, $p < .05$, respectively. Gender did not significantly predict Wave 2 participation. Our use of full information maximum likelihood in our modeling strategy meant that the two above differences were taken into account in the models.

Descriptive statistics and correlations between our core variables are presented in Table 1. Overall, in line with our framework, sustained

TABLE 2 Sample characteristics.

	Wave 1 (n = 600) M (SD)/%	Wave 2 (n = 299)
Age	45.41 (15.86)	45.86 (15.70)
Gender		
Female	50.2	50.4
Male	49.3	49.6
Other	0.5	0
Education		
NVQ5 or postgraduate diploma	24.5	27.6
NVQ4/HNC/HND/bachelor's degree or similar	37.5	37.3
NVQ3/SCE higher grade/advanced GNVQ/GCE A/AS or similar	21.7	22.6
GNVQ/GSVQ/GCSE/SCE standard	7.8	7.7
NVQ1, NVQ2	5.3	3.7
Secondary school (age < 15 years old)	2.6	1.1
Primary school	0.6	0
Employment		
Full-time	45.3	51.0
Retired	17.5	20.7
Part-time	14.0	9.9
Full-time parent, homemaker	6.1	4.7
Self-employed	5.6	4.1
Student/pupil	4.3	0.7
Unemployed and not looking for a job/long-term sick or disabled	4.1	3.2
Ethnic group		
English/Welsh/Scottish/Northern Irish/British	76.7	76.2
Any other White background	6.0	5.7
Indian	3.6	3.6
African	2.0	3.1
Pakistani	1.8	1.7
Any other Asian background	1.4	0.7
Irish	1.1	0
Bangladeshi	1.1	0.7
White and Asian	0.9	0.5
Chinese	0.8	1.1
Any other Black/African/Caribbean background	0.4	0
Any other Mixed/multiple ethnic background	0.3	0.7
Any other ethnic group	0.2	0
White and Black African	0.2	2.4

TABLE 2 (Continued)

	Wave 1 (n = 600) M (SD)/%	Wave 2 (n = 299)
Area of UK residence		
North East	14.1	14.1
South East	13.7	12.5
Greater London	13.6	13.5
East of England	10.4	13.4
West Midlands	9.2	8.8
Scotland	8.4	8.5
South West	8.4	9.7
East Midlands	5.8	3.0
Yorkshire and Humberside	5.6	5.5
Wales	4.5	4.5
North West	3.3	3.5
Northern Ireland	2.9	2.9
Social grade[a] (social class)		
A (Upper middle)	7.6	8.9
B (Middle)	46.9	46.0
C1 (Lower middle)	29.9	30.9
C2 (Skilled working)	6.7	5.9
D (Working)	4.0	6.0
E (Not working)	5.0	2.3
Person with highest income in household		
Yes	60.6	66.0
Yes, together with another household member	19.7	19.3
No	19.8	14.7
Furlough		
No	56.8	54.6
At times, but now working again	15.7	20.6
Yes, and still on furlough	4.6	2.6
Was working at the beginning of the pandemic, but have since been furloughed	4.3	6.6
Current involvement in mutual aid group	73.6	67.5
Amount of participation (hours per week during lockdown)		
>16 h	7.6	9.4
8–16 h	7.7	9.7
3–8 h	23.4	25.5
1–3 h	34.7	32.2
<1 h	12.1	14.0
No participation	13.3	8.5

(Continues)

TABLE 2 (Continued)

	Wave 1 (n = 600) M (SD)/%		Wave 2 (n = 299)	
Amount of participation (hours per week during last month)				
>16 h	9.8		11.5	
8–16 h	8.8		11.3	
3–8 h	18.8		13.0	
1–3 h	19.5		19.7	
<1 h	18.5		17.6	
No participation	24.0		27.0	
Start date of involvement[b]				
Before March 2020			13.9	
March 2020			22.1	
April 2020			17.6	
May 2020			8.2	
June 2020			5.9	
July 2020			5.0	
August 2020			5.8	
September 2020			4.8	
January 2021			3.1 (all other months <3)	
End date				
April 2021			3.9	
August 2020			3.3 (all other months <3)	
Type of participation[c]	Past month	During first lockdown	Past month	During first lockdown
Shopping for other people	3.21 (1.82)	4.08 (2.02)	3.51 (1.74)	4.26 (2.06)
Recruiting or coordinating volunteers	2.40 (1.88)	2.68 (2.20)	2.86 (1.91)	3.05 (2.33)
Distributing tasks or roles among other members of the mutual aid group	2.64 (1.95)	3.02 (2.29)	2.92 (2.00)	3.24 (2.36)
Preparing meals for other people	2.81 (1.98)	3.04 (2.24)	3.15 (1.98)	3.08 (2.24)
Volunteering with making deliveries	2.94 (1.90)	3.96 (2.19)	3.27 (1.90)	3.92 (2.24)
Offering telephone support to others	3.12 (2.03)	3.61 (2.41)	3.41 (1.92)	3.82 (2.29)
Giving emotional support to people in my community	3.34 (1.94)	4.32 (2.27)	3.53 (1.72)	4.28 (2.15)
Managing calls, emails, or social media for the mutual aid group	2.80 (1.99)	3.24 (2.43)	3.10 (1.98)	3.45 (2.40)
Providing entertainment to others (e.g. via social media or YouTube) to boost morale	2.62 (1.96)	3.02 (2.30)	3.04 (2.09)	3.29 (2.42)
Providing support to businesses or projects in my community	2.79 (1.95)	3.13 (2.25)	3.00 (2.00)	3.50 (2.38)
Being involved in planning, decision-making, and organization	2.83 (1.97)	3.28 (2.28)	3.17 (1.91)	3.47 (2.34)
Picking up prescriptions for someone	2.83 (1.85)	3.50 (2.12)	3.21 (1.80)	3.76 (2.19)

TABLE 2 (Continued)

	Wave 1 (n = 600) M (SD)/%		Wave 2 (n = 299)	
Walking someone's dog	2.68 (2.02)	2.84 (2.27)	2.96 (1.97)	3.27 (2.40)
Delivering mail for people	2.48 (1.87)	2.83 (2.24)	2.86 (1.98)	3.18 (2.23)
Other volunteering activities as part of a community support group or mutual aid group relating to Covid-19	3.05 (1.91)	3.56 (2.21)	3.25 (1.93)	3.63 (2.25)

[a]Social grade refers to the household and it is classified according to the occupation of the Chief Income Earner.

[b]Due to a technical error in Wave 1 survey presentation, measures relating to Wave 1 dates are not used.

[c]For past month, scale sum coded as 1 (never) to 7 (every day), n_{range} Wave 1 = 442–449, Wave 2 = 215–218; For during first lockdown, scale sum coded as 1 (never) to 8 (every day), n_{range} Wave 1 = 493–508, Wave 2 = 265–272.

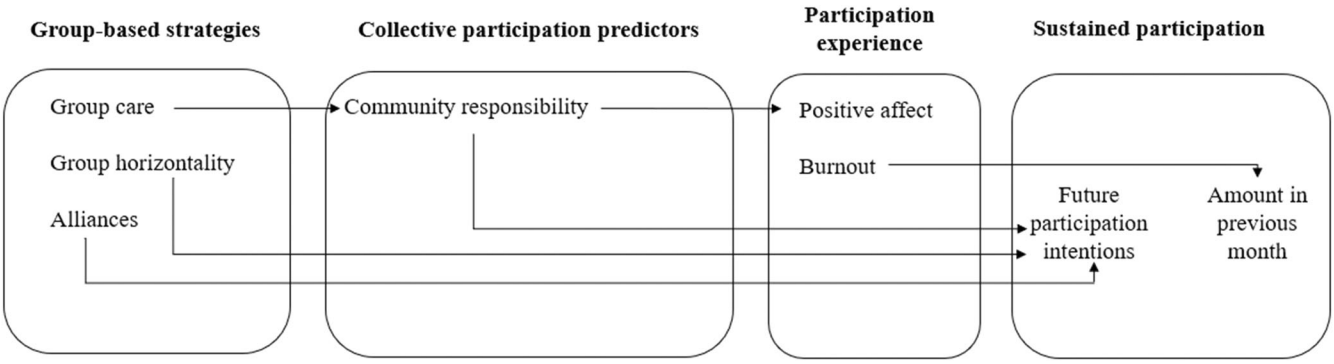

FIGURE 2 Predictors of sustained participation in Covid-19 mutual aid groups (path analyses). All paths represent positive relationships in our path analyses. Well-being was operationalized using indexes of positive affect and negative affect. Only statistically significant paths set out in our framework are presented. No indirect process through intermediate variables was observed.

participation was associated with some group-based strategies, collective participation predictors, and participation experience variables.

3.1 | Path analyses

Predictors of sustained participation and its trajectories as set in our framework are presented in Figure 2, n = 496. Indexes of sustained participation had different antecedents. Future participation intentions in Wave 2 were positively predicted by Wave 1 alliances, β = .200, p = .006, group horizontality, β = .091, p = .030, and community responsibility, β = .290, p = .001. Amount of participation in the last month in Wave 2 was positively predicted by Wave 1 burnout, β = .227, p > .001. There were no additional significant predictors of sustained participation aspects as set out in our framework. In addition, there were two direct associations between sequential indicators in the sets of variables in our framework: group care at Wave 1 predicted community responsibility at Wave 2, β = .172, p = .021, and community responsibility at Wave 1 predicted positive affect at Wave 2, β = .123, p = .024.

Whereas sustained participation was directly predicted by some of the variables in our framework, no indirect process through intermediate variables was observed. Thus, our mediation hypotheses were not supported by the data. In a reversed cross-lagged analysis (with participation as predictor), significant associations were Wave 1 future participation intentions positively predicted amount of participation, β = .208, p = .018, group identification, β = .156, p = .022, and community responsibility, β = .105, p > .035, at Wave 2. Amount of participation in Wave 1 positively predicted events participation, β = .352, p = .001, and burnout, β = .118, p = .008, at Wave 2.

3.2 | Moderation analyses

We detail below all moderations suggested by our model. *Community participation*. Among those with high, n = 246 (vs. low, n = 250) levels of previous community participation, event participation at Wave 1 predicted participation intentions at Wave 2, β = .052, p = .048, and Wave 1 burnout, and group identification predicted amount of participation at Wave 2 (β = .268, p = .001; β = .271, p = .038, respectively). Among those with low (vs. high) levels of previous community participation, Wave 1 alliances and community responsibility predicted participation intentions at Wave 2 (β = .209, p = .036;

β = .379, p = .004, respectively), and event participation at Wave 1 predicted amount of participation at Wave 2, β = .112, p < .001. Also, group care at Wave 1 positively predicted community responsibility at Wave 2, β = .284, p < .001. *Political participation*. Among those with high, n = 297 (vs. low, n = 199) levels of previous political participation, Wave 1 group communication and alliances predicted participation intentions in Wave 2 (β = .323, p = .014; β = .352, p = .002, respectively), and Wave 1 burnout predicted amount of participation at Wave 2, β = .263, p = .002. In addition, Wave 1 alliances predicted Wave 2 community identification, β = .296, p = .020, and Wave 1 group care predicted Wave 2 perceived social support, β = .203, p = .021. Among those with low (vs. high) levels of previous political participation, Wave 1 community responsibility predicted participation intentions, β = .332, p = .009, and amount of participation at Wave 2, β = .383, p = .012.

3.3 | Logistic regression

We conducted a logistic regression with longitudinal participation (dummy coded, 1 = yes [n = 198], 0 = no) as the dependent variable (Table 3). We controlled for current involvement, future participation intentions, and amount of participation in the last month (block 1). The independent variables were our predictors as outlined in our framework (entered sequentially in blocks 2–5). In Models 3–4, a one-point increase in alliances was associated with increases in the odds of longitudinal participation. This association did not persist in Model 5 (Table 3). Overall, this analysis supports the results of our path analyses concerning alliances, using a different indicator of sustained participation.

4 | DISCUSSION

Variables from each theme in our theoretical framework longitudinally predicted sustained participation in Covid-19 mutual aid groups. Direct predictors were alliances and group horizontality (group-based strategies), community responsibility (collective participation predictors), and burnout (participation experience). In addition, we found direct longitudinal associations between sequential indicators in our framework themes. Importantly, our findings also show that predictors of sustained participation diverged by volunteering experience. Also, in line with previous work (O'Dwyer et al., 2022), mutual aid volunteers engaged in a wide range of activities that are central to community resilience. Together, our findings highlight the potential for using group-based strategies to sustain participation in Covid-19 mutual aid groups and suggest that group organizers could keep volunteers engaged by adapting the use of these strategies to different groups of volunteers who have different psychological needs.

Alliances and group horizontality were the two group-based strategies that predicted greater future participation intentions over time. Our results are in line with previous qualitative findings concerning organizers' perceptions of the benefits of these strategies (Fernandes-Jesus et al., 2021; Gulliver et al., 2023; Mao et al., 2022) as well as with longstanding research findings on the benefits of strong bridging and linking social capital for community resilience (Aldrich, 2017; Aldrich & Meyer, 2015). For example, Covid-19 mutual aid group organizers identified that alliances with local authorities, charities, and other Covid mutual aid groups can be practically useful for sharing informational resources and problem-solving (e.g., around safeguarding procedures), promoting a strategic plan for service delivery, and increasing mutual aid groups' leverage in their area (Mao et al., 2022). Our findings thus suggest that organizers' knowledge and adaptive use of group alliances (without compromising independence, Power & Benton, 2021) is important for supporting and enhancing the activities of Covid-19 mutual aid groups and other informal community support groups.

In our data, levels of both community identification and community responsibility were on average medium-high and correlated with future participation intentions and with most of the variables in our model. When other variables were included, however, community responsibility, but not community identification, was significantly associated with sustained participation. Thus, for members in the groups under study, the motivation to continue was more to do with a feeling of responsibility for the community's well-being rather than psychological embeddedness in the group per se. Nonetheless, both community identification and community responsibility have the potential to contribute to sustained participation in Covid-19 mutual aid groups. In an exploratory analysis of our own data set, we found that community identification at Wave 1 operated as moderator for a number of the hypothesized pathways: the relationships between Wave 2 participation intentions and Wave 1 horizontality, group care, and alliances were significant for those with higher, but not lower, levels of community identification. Future studies could examine more systematically and in a hypothesis-driven way the extent to which community identification moderates associations between the sets of predictors outlined in our model and sustained participation in community support groups.

Predictors of sustained participation diverged based on previous participation experience. In line with our reasoning that sustained participation is more likely to be shaped by our proposed predictors among those with lower levels of previous participation experience (Barr & Drury, 2009), alliances and sense of community responsibility among those with low (but not high) previous community participation levels, and community responsibility among those with low (but not high) levels of previous political participation, predicted sustained participation. In addition, some predictors of sustained participation were important among those with higher levels of previous participation experience. Group identity and burnout among those with high (but not low) levels of previous community participation, and group communication, alliances, and burnout among those with high (but not low) levels of previous political participation,

TABLE 3 Binary logistic regression predicting longitudinal participation.

	Model				
	1 B (SE) [Odds Ratio]	2	3	4	5
Wave 1 predictors of longitudinal participation					
Intercept	−0.44 (0.25)	−2.25*** (0.63)	−2.19* (0.94)	−2.56* (1.01)	−3.88* (1.55)
	[0.64]	[0.10]	[0.11]	[0.08]	[0.02]
Current involvement	1.51*** (0.29)	1.11*** (0.32)	0.99** (0.36)	1.06** (0.38)	1.08** (0.40)
	[4.51]	[3.02]	[2.70]	[2.88]	[2.94]
Future participation intentions		0.19 (0.10)	0.18 (0.13)	0.14 (0.15)	0.22 (0.17)
		[1.21]	[1.19]	[1.16]	[1.25]
Amount of participation in the last month		0.35*** (0.09)	0.32** (0.11)	0.29** (0.11)	0.21 (0.13)
		[1.42]	[1.37]	[1.34]	[1.23]
Event participation			0.08 (0.05)	0.07 (0.05)	0.00 (0.05)
			[1.08]	[1.08]	[1.00]
Group horizontality			−0.11 (0.09)	−0.10 (0.10)	−0.03 (0.11)
			[0.89]	[0.90]	[0.97]
Group communication			−0.17 (0.24)	−14 (0.25)	−0.06 (0.27)
			[0.84]	[0.87]	[0.94]
Group care			−0.02 (0.22)	−0.07 (0.24)	−0.03 (0.26)
			[0.98]	[0.93]	[0.97]
Alliances			0.35* (0.15)	0.34* (0.16)	0.31 (0.17)
			[1.42]	[1.41]	[1.36]
Group identification				−0.21 (0.16)	−0.24 (0.19)
				[0.81]	[0.79]
Community identification				0.01 (0.17)	−0.05 (0.21)
				[1.01]	[0.96]
Perceived social support				0.15 (0.27)	0.25 (0.31)
				[1.16]	[1.28]
Community responsibility				0.25 (0.20)	0.24 (0.22)
				[1.28]	[1.27]
Perceived injustice support					−0.08 (0.30)
					[0.92]
Perceived government injustice					0.15 (0.46)
					[1.16]
Community efficacy					0.01 (0.26)
					[0.99]
Positive affect					−0.06 (0.30)
					[0.94]
Negative affect					0.12 (0.24)
					[1.13]

(Continues)

TABLE 3 (Continued)

	Model				
	1 B (SE) [Odds Ratio]	2	3	4	5
Burnout					0.29 (0.15) [1.33]
Deviance	354.29	323.29	273.88	268.14	237.46
R^2 Negelkerke	0.12	0.30	0.40	0.50	0.60
Observations	299	293	261	257	234

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

predicted sustained participation. These findings suggest that organizers could adapt retention strategies based on volunteers' profile and needs. For example, group alliances may particularly help to sustain those with higher levels of political participation via addressing needs relating to the pursuit of wider social change agendas, or needs relating to forming a distinct (mutual aid) group identity (Fernandes-Jesus et al., 2018). Burnout—typically associated with activists' participation withdrawal (Chen & Gorski, 2015)—predicted sustained participation among the more experienced. This counterintuitive finding raises the possibility that a higher level of commitment to community or political action that aims to promote social change potentially leads to the continued pursuit of this objective even in the face of exhaustion with group involvement (e.g., driven by high self-expectations, Chen & Gorski, 2015). This interpretation suggests that the use of group care practices (Fernandes-Jesus et al., 2021) should be alert to burnout symptoms and their personal costs among more experienced volunteers. Future research concerning sustained participation processes in mutual aid group volunteers with different profiles is warranted.

Overall, our findings provide some empirical support for a model in which certain group-based strategies, collective participation predictors, and participation experiences are interconnected and predict sustained participation in mutual aid groups. Specifically, group care predicted community responsibility, community responsibility predicted positive affect, and burnout predicted amount of participation in the previous month. Also, four of the five group-based strategies examined directly predicted sustained participation in at least one of our longitudinal analyses, whereas group care appears less directly important to sustained participation.

In line with our model, most group-based strategies positively correlated with group identification and future participation intentions. However, none of the group strategies predicted sustained participation indirectly, such that the precise mechanism underlying this association remains unclear. Levels of identification with the Covid-19 mutual aid group were on average medium-high in our sample and correlated with most of the other variables, but its relation to processes initiated by group strategies was trumped by the contribution of other psychological predictors.

4.1 | Limitations

Mutual aid volunteers tend to be middle-class, female, and White (O'Dwyer, 2020; O'Dwyer et al., 2021). Whereas nearly half of our sample was middle-class, it was also was gender-balanced and representative of UK population in terms of White ethnicity (Office for National Statistics, 2013). The current study had a 2–3-month follow-up period, and future research is needed to understand whether the current associations of group-based strategies change over longer time periods. Nonetheless, the fact that these strategies predicted sustained participation over a short time period attests to their applied potential. Finally, whereas attrition between waves was considerable (49.8%), our sample size exceeds the power required for our analyses.

4.2 | Conclusions

Covid-19 mutual aid groups continue to be a vital resource for local communities. This paper provides longitudinal evidence concerning the psychological trajectories that shape sustained participation in Covid-19 mutual aid groups. Our findings highlight group-based strategies as a potential resource for organizers seeking to sustain participation, whose use can be tailored depending on the individual profiles of Covid-19 mutual aid volunteers. To optimize community support delivery, it is crucial to identify how different organizations—whether rooted in the community or in authorities—can create alliances that enable knowledge exchange and collaborations (Rendall et al., 2022). This is a problem that is broader than the Covid-19 pandemic, and the solutions we have examined here have application to a fundamental challenge of community resilience—that of maintaining local support groups over time. The current study, therefore, represents an important step toward understanding how we can successfully navigate major societal challenges in the Covid-19 pandemic and beyond.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

Drury, J. (2022). *Facilitating the Public Response to COVID-19 by Harnessing Group Processes, 2020-2021*. [Data Collection]. Colchester, Essex: UK Data Service. 10.5255/UKDA-SN-855317. https://reshare.ukdataservice.ac.uk/855317/.

ETHICS STATEMENT

This research was approved by the Cross-Schools Research Ethics Committee at University of Sussex (ER/MF457/1).

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