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Journal article

Public behaviour in response to the Covid-19 pandemic:

Understanding the role of group processes

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Abstract:	<p>Background In the absence of a vaccine, behaviour by the public is key to the response to the Covid-19 pandemic. Yet, as with other types of crises and emergencies, there have been doubts about the extent to which the public are able to engage effectively with the required behaviour. These doubts are based on outdated models of group psychology.</p> <p>Aims and argument We analyse the role of group processes in the Covid-19 pandemic in three domains: recognition of threat; adherence by the public to the required public health behaviours (and the factors that increase such adherence); and actions of the many community mutual aid groups that arose during lockdown. In each case, we draw upon the accumulated research on behaviour in emergencies and disasters as well as the latest findings in relation to the Covid-19 pandemic to show that explanations in terms of social identity processes make better sense of the patterns of evidence than alternative explanations.</p> <p>Conclusion If behaviour in the pandemic is a function of mutable group processes rather than fixed tendencies, then behavioural change is possible. There was evidence of significant change in behaviour from the public, particularly in the early days of the pandemic. Understanding the role of group processes means we can help design more effective interventions to support collective resilience in the public in the face of the pandemic and other threats. We draw out from the evidence a set of recommendations on facilitating the public response to Covid-19 by harnessing group processes.</p>

1 **Public behaviour in response to the Covid-19 pandemic: Understanding the role of**
2 **group processes**

3

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18 JD took primary responsibility for preparing the manuscript. All authors assisted with writing
19 sections and with manuscript preparation. All authors approved the final manuscript for
20 submission.

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22 Data availability is not applicable to this article as no new data were created or analysed in
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28 **Abstract**

29 **Background**

30 In the absence of a vaccine, behaviour by the public is key to the response to the Covid-19
31 pandemic. Yet, as with other types of crises and emergencies, there have been doubts about
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43 If behaviour in the pandemic is a function of mutable group processes rather than fixed
44 tendencies, then behavioural change is possible. There was evidence of significant change in
45 behaviour from the public, particularly in the early days of the pandemic. Understanding the
46 role of group processes means we can help design more effective interventions to support
47 collective resilience in the public in the face of the pandemic and other threats. We draw out
48 from the evidence a set of recommendations on facilitating the public response to Covid-19
49 by harnessing group processes.

50

51 **Introduction**

52 In the absence of a vaccine, public behaviour is key to the response to the Covid-19 pandemic
53 (1, 2). The virus spreads through close contact between people and via surfaces, and so the
54 actions that members of the public have taken to protect themselves and others include

55 physical distancing,¹ regular hand-washing, working from home, wearing face coverings, and
56 self-isolating if they have symptoms. As in the case of other crises, some were doubtful about
57 the extent to which the public would be willing and able to behave in the required ways.
58 Often these doubts were based on the assumption that there is a generic behavioural tendency
59 in such events, grounded in a narrowly self-interested or psychologically fragile human
60 nature (4). Previous research on human responses to emergencies and disasters has indeed
61 demonstrated some common patterns of behaviour in such events. In contrast to the most
62 pessimistic expectations, however, collectively resilient behaviours -- in particular, public
63 mutual cooperation -- are relatively common (5). But more importantly, this research and the
64 resultant theory suggest the social and psychological *conditions* under which public
65 behaviour in crises takes one form rather than another. Some of the most important
66 conditions are to do with *group processes* - that is, people's psychological memberships of
67 groups or social categories and their relationship with others outside the group.
68 Understanding behaviour in the pandemic as a function of mutable group processes, rather
69 than fixed psychological tendencies, means a greater understanding of behavioural change -
70 both analysing it and designing interventions to facilitate it.

71 The effects of a pandemic are much more dispersed in time and space than those of
72 other emergencies such as fires, earthquakes and terrorist attacks. Yet, like these other kinds
73 of emergencies, a pandemic such as Covid-19 represents a mortal threat which creates
74 collective fear. In all cases, immediate and dramatic responses are required. Therefore, in this
75 article, as well as referring to recent research on public responses to Covid-19, we draw upon
76 the accumulated research on behaviour in emergencies and disasters to provide insights into
77 the role of group processes in the pandemic. Our examples of behaviour and policy in the
78 pandemic come mostly from the UK context, as that is where the authors are based.
79 However, we suggest that most of our points are transferable to the situation in other
80 countries.

81 The starting point for a behavioural response to an emergency is the recognition of the
82 threat (6), so the first part of the article will cover what we know about when and how people
83 perceive threats. The second part will focus on adherence by the public to the required public

¹ While 'social distancing' is the term used by many governments, the WHO (3) recommends the term 'physical distancing' as more accurate.

84 health behaviours and the factors that increase such adherence. The third part examines the
85 determinants of neighbourhood support and the many community mutual aid groups that
86 arose during lockdown. Finally, we draw out from the review of evidence three
87 recommendations on facilitating the public response to Covid-19 by harnessing group
88 processes.

89 **1. When and how people perceive threats**

90 ‘Panic’ is a popular view of how people respond in emergencies (7). There are various
91 definitions of ‘panic’, but one thing that distinguishes the concept from related notions such
92 as fear and flight is *over-reaction* to a perceived threat.

93 A basic empirical problem with the concept of panic in the context of mass
94 emergencies is that of measurement (8): in an emergency, how do we *know* if fear is
95 ‘excessive’? At the time, what counts as an overreaction is typically a subjective judgement.
96 Post hoc it’s easier to judge -- but then it’s no longer a description of someone’s mental state
97 and it’s not explanatory.

98 For example, at the beginning of the Covid-19 crisis, was the extra shopping that some
99 people carried out -- so-called ‘panic buying’ -- really excessive? On what criteria? If people
100 believe (a) that they may have to stay home for prolonged periods of time, or (b) that other
101 people will soon empty the shelves, or both (a) *and* (b), it’s logical to buy additional goods. It
102 may be excessive from the point of view of the observer, but psychologically it might be an
103 understandable reaction to a perceived threat.

104 The ‘panic’ concept is sometimes used to claim that public overreaction to signals of
105 danger is a major cause of death in emergencies (e.g., 9). But most sources suggest that
106 people are more likely to die from *ignoring* or reacting too slowly to indications of danger
107 than they are from over-reacting (6). Indeed, public under-reaction to signals of threat in
108 emergencies and disasters is common (10). This pattern of response has sometimes been
109 characterised as evidence of an ‘optimistic bias’ (e.g., 11). But there are a number of group-
110 level psychological factors that determine the extent to which people respond to (versus
111 discount) signals of impending emergency.

112 The first factor is the *historical context*. For example, if there hasn’t been an
113 earthquake locally in 100 years, people may not see the point in engaging in preparedness.
114 But when they have had experience of quakes and other disasters, preparedness activities
115 increase (12). In fact, signal detection theory (13) would suggest that, given the frequency or

116 magnitude of genuine threats, the belief that ‘it won’t happen to us’ can actually reverse, and
117 people become extremely vigilant about potential signals of danger. For example, in London
118 in 2017, following a series of terrorist attacks earlier in the year, hundreds of people in
119 Oxford Street fled in fear from a noise that turned out to be harmless.

120 The second factor is *self-relevance*. Self or identity exists at many levels, from personal
121 identity (e.g. ‘I’ as an individual with unique personal characteristics) to the many social
122 identities that are important to us based on our group memberships (e.g., national identity
123 [‘us’ as British people] or religious identity [‘us’ as Muslims]). The social categories we
124 belong to can affect whether we perceive threats as relevant (14) and can facilitate either
125 adherence to protective behaviours or the adoption of risky behaviours (15). If the threat of
126 Covid-19 is understood principally in relation to the individual, then those individuals least at
127 risk (those young and healthy) may well feel it is unnecessary to change their behaviours.
128 Indeed, they might also feel they have a right to take risks with their own health (16).
129 Thereby they continue to act in ways that put others at risk of infection. This perceived lack
130 of self-relevance may be one reason why younger people have been among those with lower
131 levels of adherence with public health regulations such as staying at home during lockdown
132 (17). By contrast, where people perceive ‘us’ as being at risk, they are less likely to discount
133 that risk (14).

134 Most information about impending threat in a potential or actual emergency is indirect,
135 or socially mediated. People do not see flames - they hear a fire alarm, or they see others
136 escaping. The third factor in perceiving threat is therefore *communication* about that threat,
137 which needs to come from a trusted source. A source that provides too many false positives
138 can lead to false negatives in behavioural response - as in the poor public response rate to fire
139 alarm bells (18). Conversely a *trusted* source can convince there is a threat, even when it’s
140 novel and invisible. In the early weeks of the pandemic in the UK, trust in the government
141 was high (19) as were public concerns about the threat of the virus (20) (and those who
142 denied the threat, for example by drawing upon conspiracy theories or through mistrust of
143 science (21), are in the minority).

144 Communication and hence influence regarding threat occurs not only through deliberate
145 attempts (such as alarms and warnings), but also through observed examples of others’
146 conduct. What our peer groups, family, community and others appear to feel safe doing can
147 serve to convey what it is safe for us to do. In all these cases, trustworthiness is linked to
148 shared identity. When the source is seen as one of ‘us’, we are more likely to see their

149 messaging and behaviour as relevant, more likely to listen, and more likely to follow their
150 instructions or their example. This has been demonstrated in both ‘normal’ life (22) and in
151 relation to the Covid-19 pandemic (23).

152 **2 Adherence to the required public health behaviours**

153 Most of the required public health preventive behaviours during the Covid-19 pandemic
154 involved some sacrifice of personal freedoms. Staying home and other aspects of ‘lockdown’
155 were costly and onerous for most people - and for some groups much more than for others
156 (24). Prior to lockdown in the UK, some doubted whether the public had the mental strength
157 to endure these privations over time. This was most clearly expressed in early March by the
158 Chief Medical Officer who stated “There is a risk if we go too early people will
159 understandably get fatigued and it will be difficult to sustain this over time” (25). This notion
160 of ‘fatigue’ as a form of psychological frailty (4) was quite separate from the expected
161 stresses of quarantine (26) and the mental health toll for many people.² This contemporary
162 concern with public mental fragility parallels government fears in the second world war of
163 public panic, shelter mentality, and widespread breakdown in response to the Blitz (27). In
164 both cases, there was a debate around the extent to which coercion would be needed to
165 enforce public adherence.

166 Research on behaviour in other public health emergencies has shown that people will
167 be willing to undergo high personal cost prevention and mitigation measures where these are
168 perceived as legitimate public health interventions and where the relevant authority is
169 respected and is seen as ingroup (rather than as ‘other’). A good example is mass casualty
170 decontamination, which is a procedure undertaken to remove contaminants from the skin of a
171 potential casualty in the event of a chemical, biological, radiological or nuclear (CBRN)
172 incident. Because the procedure can involve removing clothes in a public place, those
173 affected may perceive decontamination as more threatening than the CBRN incident itself.
174 Reviews of the literature find that any failure by responders to consider casualties’
175 psychosocial needs can lead to failures of the procedure, including people leaving the scene
176 still contaminated, and therefore endangering their families and communities (28). The
177 reviews also showed that the use of coercive measures (threats, force, shouting) had a

² Contrary to some claims, the notion of ‘behavioural fatigue’ was not suggested by behavioural scientists advising the UK government; rather, those participating in SPI-B, the SAGE subgroup on behaviour, criticized the concept (25, 33).

178 backfire effect rather than enhancing effective public engagement. However, when
179 responders managing the procedure explained the importance of decontamination and
180 provided regular updates about their actions, this increased perceptions of the legitimacy of
181 the procedure among casualties. In turn, this enhanced shared identification between
182 emergency responders and members of the public. Shared identification predicted: reduced
183 public anxiety (29); greater public compliance with the procedure and cooperation (29, 30);
184 and greater speed and efficiency of the decontamination process (31). Subsequent research
185 has demonstrated that effective engagement with the decontamination procedure is also
186 increased when casualties perceive the effectiveness of the measures (32).

187 While staying at home and distancing more generally during the ‘lockdown’ were
188 experienced as onerous, adherence rates were very high in the UK.³ This was the case on
189 both behavioural measures (38) and self-report measures across multiple samples (19, 39)
190 measures. These high rates of adherence suggest that the public were indeed psychologically
191 able to make the required sacrifices (37).

192 A number of studies have now looked at predictors of this adherence. In addition to
193 the perceived effectiveness of public health measures (e.g., 40), many studies have identified
194 group processes including social identification, similar to those evidenced in the
195 decontamination research. Thus the Office for National Statistics data showed that at the
196 same time that adherence rates were high during the strict lockdown, there was a strong sense
197 among members of the public that people were becoming more united (41), suggesting a
198 possible association of the two. The association between group processes such as shared
199 identification and adherence to (or support for) public health measures has now been
200 demonstrated in cross-sectional and longitudinal survey studies as well as in experiments.
201 Thus predictors include perceived norms within valued social groups (42), identification with
202 one’s community (43), sense of public duty (44), empathy with vulnerable groups (45), the
203 belief that ‘we’re all in it together’ (which was found to be more important than threats of
204 coercion) (46), social capital (47), national identification (48), horizontal collectivism (21),
205 and belief in shared values of security and responsibility (49). Overall these factors evidence

³ Adherence rates for self-isolation were much lower (34). As well as the commitment, this is suggested to be due to material constraints (e.g., not having the financial support or support for shopping needs) and not understanding what self-isolation actually requires (35, 36).

206 the importance of a sense of collectivity, at the group, community or national level, that has
207 driven adherence behaviours.

208 There has been some shaming and stigmatizing of those who are perceived not to be
209 adhering (50). But structural inequalities have been shown to affect ability to comply (24). In
210 the same way that disadvantaged demographics are over-represented in the infection and
211 death figures (25, 51), some groups more than others have been less able to distance, and
212 were obliged to go into work on sometimes crowded trains, and were limited to busy public
213 spaces when taking exercise.

214 As lockdown in the UK eased over May, June and July 2020, there was evidence that
215 public adherence to the rules declined (52, 53). Other developments over the same period
216 suggest possible explanations for this decline more in line with the factors described above
217 than behavioural fatigue.

218 First, the official messaging changed. In May, the official slogan ‘stay at home’ was
219 replaced with ‘stay alert’, shifting from a clear behavioural imperative to a somewhat vaguer
220 instruction on how to feel. There were also a large number of government announcements on
221 changes to the rules in May, June and July. There is some evidence that official
222 communications were becoming less effective both in communicating risk and in providing
223 information on mitigations. Over this period, perceptions of being unsafe reduced (54) and
224 public knowledge of the rules declined (55). Further, the most significant relaxation of
225 lockdown -- which included being allowed to visit a pub, cafe or restaurant, museum, library,
226 theme park, cinema, hotel, hairdresser or barber -- which took place on July 4th, appeared to
227 have a strong signalling effect (not least, perhaps, because these were heralded in the mass
228 media as ‘freedom’ and as the ‘end of lockdown’). Thus, surveys report drops in people’s
229 reported adherence to physical distancing shortly afterwards (56, 57).

230 Second, there were some significant changes in terms of national unity and public
231 relations with the government that interacted with these problems with communication. A
232 number of sources show that the sense of national unity that was evident at the start of the
233 pandemic declined over time (58). The notion that ‘we are all in it together’ was flatly
234 contradicted by the evidence that structural differences between groups -- the greater
235 economic losses in terms of jobs and pay for some and not others, and the mounting evidence
236 of particular risk among ethnic minorities (51) -- was being exacerbated by the pandemic.

237 A significant feature of this decline in a sense of national unity was a loss of trust in
238 the UK government. In particular, lack of government repentance over the actions of one
239 special advisor, who admitted breaking the rules on lockdown, served to communicate that
240 there were one set of rules for the privileged and another set for everyone else who had made
241 the sacrifices of staying at home and not visiting family; this decline in trust was in turn
242 associated with a drop off in compliance (59).⁴

243 3. Neighbourhood support and community mutual aid groups

244 Government policies such as the community resilience programme (62, 63) are a recognition
245 that public involvement, in the form of active support for others affected, is a necessary part
246 of emergency response.⁵ Research on emergencies and disasters shows that such public
247 involvement is common. Of course, not every member of the public provides support; and
248 some emergency events evidence more support behaviours from the public than others. But
249 more lives are saved by the “average” citizen, whether “bystander” or fellow survivor, than
250 are saved by professionals.

251 How does this public support come about? Research on a variety of emergencies and
252 disasters suggests that an underlying mechanism is that of a shared social identity among
253 those affected (64). Shared social identity facilitates support in three ways. It motivates
254 people to *give* support to others (since their interest is seen as ‘our’ interest) (64). It increases
255 *expected* support within the ingroup (and hence enables a coordinated response) (65). And it
256 means that offers of help are *perceived* as genuine rather than reflecting ulterior motives
257 (which means that the help is more likely to be accepted) (66). Most group identities reflect
258 long-standing group memberships; hence existing social capital is one of the major factors in
259 community resilience (67). But an emergency can also create a completely new group

⁴ Other research (60) suggests that there were two types of public response to this incident. First, there was cynicism about the rules, which was associated with lower levels of physical distancing compliance. Second, those who were angry about the actions of the government advisor were *less* likely than others to believe that it was acceptable to bend the rules but *more* likely than others to comply with the guidelines themselves. This latter pattern is in line with Stephen Reicher’s suggestion that the advisor would be seen as an anti-role model (61).

⁵ While governments started officially acknowledging this after 9/11 (71), some disadvantaged groups have long made their own resilience plans - in the knowledge that the state will not provide them with the support and resources they need in times of crisis (72).

260 identity or sense of ‘we-ness’ among those affected, based on common fate (68). Further, in
261 this context, the supportive behaviour of fellow ingroup members can serve to define
262 supportive group norms; and identification with the group increases the influence of such
263 norms (69).

264 At the start of the Covid-19 pandemic, there was a massive upsurge in mutual caring
265 behaviours among members of the public (70). Mutual social support among members of the
266 public took different forms, partly reflecting community members’ differing needs.
267 Moreover, the requirement for some to self-isolate at home meant that there were multiple
268 simultaneous needs. Neighbours helped neighbours with shopping, collecting medical
269 prescriptions, dog walking, providing information, and emotional support (73). For example
270 in one week in April 2020, the ONS survey found that nearly two thirds of adults surveyed
271 said other local community members would support them if they needed help during the
272 pandemic, and over one in three adults said they had done shopping or other tasks for
273 neighbours in the previous week (74). Identification with the community has been shown to
274 be a predictor of helping neighbours in these ways (43).

275 In addition to informal interactions between neighbours, a very large number of
276 organized mutual aid and community support groups were set up. One estimate made in May
277 2020 was that there were 4,300 such groups connecting an estimated three million people in
278 the UK (75). These ranged from Facebook groups (which acted simply to connect requests
279 for help with offers from volunteers) to those groups that cooked food and carried out
280 deliveries themselves. One research study concluded that such groups have been crucial in
281 the society’s response to the pandemic (76).

282 A number of studies are now investigating the psychology of volunteering and mutual
283 aid during the pandemic. Abrams et al.’s survey (77) found that, compared to other
284 participants, those who had volunteered to help others in the context of the pandemic reported
285 higher trust in others to follow the guidelines, higher trust in the government, higher
286 compassion for people living in their local area, and stronger connections with their family,
287 friends, colleagues and neighbours. While some mutual aid groups have been ‘emergent’,
288 reflecting new relationships among participants (76), many others are extensions of existing
289 community groups and are based on existing social capital (76).

290 Previous research on ‘altruistic communities’ in other kinds of disaster (78) suggests
291 that these groups decline over time as people run out of emotional and physical resources or

292 the state steps in (79). There has been only limited research on how such groups sustain
293 themselves over time. But it would seem that some of the factors that can help include a
294 group identity, a place to meet and talk about the group and its aims, commemorative events,
295 support (but not co-option) from local authorities, and alliances with other groups (80, 5).

296 **Conclusions and recommendations**

297 There are many reasons why it is important to understand the role of group processes in the
298 Covid-19 pandemic, but we will focus here on two of the most important ones. The first
299 reason is that, without a proper understanding of group processes, practitioners and
300 policymakers might instead make decisions by drawing upon ‘folk psychologies’. Examples
301 of folk psychology include the assumption that the public will necessarily panic and be
302 incapable of taking the responsibility needed when crisis strikes (7). Emergency management
303 strategies based on these assumptions – such as use of coercion and withholding information
304 from the public -- are known to be ineffective and even counterproductive (5). In the case of
305 Covid-19, we have just seen the damaging consequences of relying on folk-psychological
306 assumptions. The ‘common sense’ notion of supposed public ‘fatigue’ was one explanation
307 given for the timing of the implementation of necessary physical distancing and lockdown
308 measures, with critics suggesting that the implementation of such measures was delayed and
309 that this delay has cost lives (52, 81).

310 Second, if behaviour in the pandemic is a function of mutable group processes rather
311 than fixed tendencies, then behavioural *change* is possible. This means that we can help
312 design more effective interventions to facilitate collective resilience in the face of the
313 pandemic and other collective threats. Therefore, based on the above, and in line with other
314 sets of recommendations, both in relation to the pandemic (5, 83 – 85) and to emergencies
315 more generally (2, 82), our recommendations are as follows:

316 (1) *Provide clear and credible information on risk from a trusted source.* People are more
317 persuaded by messages from fellow ingroup members than outgroup members. More
318 specifically, where a group member is seen as embodying the group’s identity and values,
319 this increases follower adherence to their guidance (86). Therefore, those responsible for the
320 communication of information on risk need to ensure that the messaging is clear, but also to
321 consider who would be the best person to deliver that message and how that person can
322 create a connection with the audience.

323 (2) *Focus on our common interests and identity to engage people in the commitments that*
324 *need to be made (which are mostly for others rather than for the individual).* The importance
325 of clear messaging extends from the nature and extent of the threat to the actions that people
326 need to take. The UK government messaging that justified ‘staying at home’ in terms of
327 ‘protecting the NHS’, and which promoted distancing behaviours and mask-wearing for
328 others (rather than the personal self), were some of the most effective.

329 (3) *Listen to, recognize, and resource community support groups to give them agency to*
330 *sustain themselves over time.* In the UK, the importance of community mutual aid groups is
331 recognized at a national level by the Civil Contingencies Secretariat and the Communities
332 Prepared National Group as well as by many Local Resilience Forums. It is evident that
333 official bodies have learned a lot from mutual aid groups. There is understanding that such
334 groups play a vital role and need to be supported (76). But it also important that support for
335 such groups is based on the group’s needs even if these do not completely align with those of
336 the authorities.

337 At the time of writing (October 2020), we are still in the relatively early days of the
338 pandemic. Although many research studies have been carried out on public behaviour during
339 the pandemic, there is still much we don’t know. Priorities for the future include
340 understanding how the group processes described here can contribute to recovery, mitigate
341 the ongoing effects of secondary stressors on mental health, and enhance public engagement
342 with vaccines.

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