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Public behaviour in response to the Covid-19 pandemic:

Understanding the role of group processes

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Abstract:	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 These doubts are based on outdated models of group psychology. 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. 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.

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

2 **group processes**

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16 We have no conflicts of interest to declare.

17 **Author contribution**

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.

21 **Data availability statement**

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

23 this study.

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31   pandemic. Yet, as with other types of crises and emergencies, there have been doubts about

32   the extent to which the public are able to engage effectively with the required behaviour.

33   These doubts are based on outdated models of group psychology.

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36   recognition of threat; adherence by the public to the required public health behaviours (and

37   the factors that increase such adherence); and actions of the many community mutual aid

38   groups that arose during lockdown. In each case, we draw upon the accumulated research on

39   behaviour in emergencies and disasters as well as the latest findings in relation to the Covid-

40   19 pandemic to show that explanations in terms of social identity processes make better sense

41   of the patterns of evidence than alternative explanations.

42   **Conclusion**

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

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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

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[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

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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

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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

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[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

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[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 other 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.

11

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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