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Multiple group memberships protect against anticipatory anxiety for social situations

Jessica L. Donaldson  | Tegan Cruwys | Amy Dawel | Junwen Chen

School of Medicine and Psychology, The Australian National University, Canberra, Australia

Correspondence

Jessica L. Donaldson, School of Medicine and Psychology, The Australian National University, 39 Science Road, Canberra, ACT 2601, Australia.
Email: jessica.donaldson@anu.edu.au

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Abstract

For people with social anxiety, ongoing exposure to feared situations is crucial for both treatment and the prevention of relapse. The COVID-19 pandemic—with prolonged, often enforced, reductions in people's social contact—reduced such exposure and may thus have exacerbated social anxiety symptoms. In this three-wave longitudinal study ($N = 212$) we explored whether people's membership in multiple groups could protect against anticipatory anxiety for, and avoidance of, social situations. In line with our predictions, pre-pandemic multiple group memberships reduced anticipatory anxiety and avoidance at Waves 1 and 2 (June and August 2020). Controlling for participants' pre-pandemic multiple group memberships, maintained group memberships (from pre-pandemic to Wave 2) predicted lower Wave 2 anticipatory anxiety and avoidance, and lower Wave 2 anticipatory anxiety predicted reduced social anxiety symptoms at Wave 3. These findings are discussed with an emphasis on how social identity theorising and cognitive behavioural approaches to social anxiety can be successfully integrated.

KEYWORDS

anticipatory anxiety, avoidance, coronavirus, multiple group memberships, social anxiety, social identity, social phobia

Abbreviations: G4H, Groups 4 Health; SIMIC, social identity model of identity change.

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1 | INTRODUCTION

Social anxiety disorder is characterised by intense fear of other people's evaluations (American Psychiatric Association, 2022) and affects 3.1% of people in high-income countries annually (Stein et al., 2017). Crucially, it is not just those with diagnosed social anxiety who are impacted by their symptoms. Social anxiety occurs along a spectrum of severity (i.e., at subclinical levels; see Knappe, Beesdo, Fehm, Leib, & Wittchen, 2009; Ruscio et al., 2008). To treat social anxiety, best-practice guidelines recommend cognitive behavioural therapy (CBT), a core component of which is exposure (National Institute for Health and Care Excellence [NICE], 2013). Exposure provides a learning experience that can help modify people's cognitions, and their assumptions about their performance and other people's reactions (see Hope, Heimberg, & Turk, 2006; Wells, 1997). Yet, there is little research on how people's social anxiety is affected when such exposure is not feasible. Cognitive behavioural models of social anxiety's maintenance (e.g., Clark & Wells, 1995; Rapee & Heimberg, 1997) would predict that reduced exposure to feared situations may have similar effects to avoidance: reducing short-term distress, but, in the lead up to future feared situations, increasing engagement in dysfunctional cognitive processes (called anticipatory processing) which subsequently increase anxiety. Both avoidance and anticipatory processing—including its affective component, termed anticipatory anxiety—maintain social anxiety. As the COVID-19 context was characterised by prolonged and often enforced reductions in people's exposure to social situations through lockdowns and other restrictions, protracted isolation became many people's reality—including for those with social anxiety. Harnessing this context, our study explored the relationship between anticipatory anxiety, avoidance, social anxiety, and participants' multiple group memberships in a three-wave study during the COVID-19 pandemic.

1.1 | The roles of exposure, avoidance, and anticipatory anxiety in social anxiety

CBT based on Clark and Wells' (1995, also see Clark, 2001) or Rapee and Heimberg's (1997); also see Heimberg, Brozovich, & Rapee, 2014) models is recommended as the frontline treatment for adults with social anxiety (NICE, 2013). Both models recommend using exposure to increase clients' engagement with feared situations, providing opportunities for new learning. Such exposure also directly counters a central maintaining factor in social anxiety—avoidance. Avoidance sustains social anxiety via negative reinforcement, such that while reducing short-term distress, it interferes with people's ability to engage successfully in feared situations (thus developing a sense of capacity), which increases subsequent anxiety. Avoidance also functions to perpetuate social anxiety through its influence on downstream maintaining factors like anticipatory anxiety (Clark & Wells, 1995).

Anticipatory anxiety is part of a broader dysfunctional cognitive process called pre-event or anticipatory processing (for a review see Wong, 2016). According to Clark and Wells (1995), people with social anxiety recall negative images of themselves prior to entering a social situation and begin preparing for what is expected to be a negative experience—this anticipatory processing in turn heightens their anxiety. For instance, Hinrichsen and Clark (2003) asked participants to engage in anticipatory processing before a speech task, which led to greater and more sustained anticipatory anxiety, and heightened anxiety during the speech among people with both high and low social anxiety symptoms (see also Vassilopoulos, 2004; Wong & Moulds, 2011). More recently, anticipatory anxiety for a social event was found to mediate the relationship between social anxiety and greater pre-drinking for that same event (Buckner, Lewis, Terlecki, Alberty, & Moss, 2020). As a maintaining factor, anticipatory processing is framed as leading to one of two outcomes: people may avoid social situations or enter them with heightened anxiety (Clark & Wells, 1995).

1.2 | Social anxiety during the covid-19 pandemic

Given our understanding of the maintenance of social anxiety, the implications of the COVID-19 pandemic are concerning. Not only did the associated COVID-19 lockdowns and restrictions limit people's exposure to social situations, which may function like avoidance, but anticipatory anxiety may also have been especially common during the pandemic, particularly towards the end of a lockdown as people began to anticipate re-engaging socially. Indeed, it is possible that the widespread experience of anticipatory anxiety may not only have caused short term distress, but also sustained people's social fears and increased their likelihood of prolonged avoidance. Emerging evidence is consistent with this reasoning, with multiple studies reporting increased social anxiety symptoms across the COVID-19 pandemic (e.g., Arad, Shamai-Leshem, & Bar-Haim, 2021; McLeish, Walker, & Hart, 2022; Thompson et al., 2021; cf. Langhammer, Peters, Ertle, Hilbert, & Leuken, 2022). Greater social anxiety symptoms also predict other negative outcomes, such as increased anxiety and stress symptoms (Carlton, Garcia, Andino, Ollendick, & Richey, 2022), and these impacts may be sustained beyond the COVID-19 pandemic (i.e., after restrictions have eased; Morales et al., 2022). Finally, Ho and Moscovitch (2022) found that greater pre-pandemic social anxiety symptoms were associated with greater loneliness during the pandemic. The current research builds on this evidence to not only consider the impact of the COVID-19 context on social anxiety but also to explore two potential mechanisms (anticipatory anxiety for and avoidance of future social situations) which may underlie the apparent exacerbation of social anxiety symptoms and have relevance well beyond the pandemic. We also seek to identify factors which protect against anticipatory anxiety and avoidance.

1.3 | The social identity approach to health and well-being

A robust body of work has established the close link between social connection and health. For example, in Holt-Lunstad, Smith, and Layton's (2010) meta-analysis, strong social relationships were associated with a 50% reduction in mortality, which was comparable to, if not greater than, countering the effects of other well-established risk factors like smoking. Similarly, in a recent meta-analysis, loneliness—one's subjective sense of social disconnection—was associated with greater anxiety, depression, and suicidality (Park et al., 2020). Countering this sense of social disconnection is particularly important in social anxiety, because social anxiety symptoms are bi-directionally related to loneliness (Lim, Rodebaugh, Zyphur, & Gleeson, 2016). However, not all social relationships are equal when it comes to mental health. Several studies have indicated that it is *group-based belonging* that seems have the most powerful benefits (Haslam et al., 2019; Haslam, Cruwys, & Haslam, 2014; Jetten et al., 2015).

The social identity approach, which encompasses social identity (Tajfel & Turner, 1979) and self-categorisation (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987; Turner, Oakes, Haslam, & McGarty, 1994) theories, posits that the self-concept encompasses not only personal identities—how we are unique from others—but also *social identities*. Social identities represent *internalised* group memberships, say, as a feminist, such that they help to define who we are in connection with others (Tajfel & Turner, 1979). However, social identities provide more than *merely* social connection—when a group membership is internalised it creates a sense of belonging, meaning, and collective agency (Greenaway, Cruwys, Haslam, & Jetten, 2016). Unsurprisingly then, membership of *multiple* groups has been linked to greater well-being and life satisfaction across a variety of populations, including students (Iyer, Jetten, Tsivrikos, Postmes, & Haslam, 2009), people experiencing homelessness (Walter, Jetten, Dingle, Parsell, & Johnstone, 2016), and retirees (Steffens, Jetten, Haslam, Cruwys, & Haslam, 2016). For instance, Cruwys et al. (2013) found that gaining group memberships predicted reduced depression symptoms up to 6 years later in a community-based sample of adults, particularly among those with a history of depression. This research highlights the importance of social connection, particularly multiple group memberships, in supporting people's mental health.

Yet, during periods of change (such as the COVID-19 pandemic), capacity to maintain group memberships may be challenged. The social identity model of identity change (SIMIC) asserts that during a stressful life event,

maintaining or gaining positive group memberships will protect against ill-health; on the contrary, losing such groups will exacerbate it (Jetten, Haslam, & Haslam, 2012; also see Haslam, Haslam, Jetten, Cruwys, & Steffens, 2021). Longitudinal research found that identity loss predicted reduced well-being among commencing international students (Praharsro, Tear, & Cruwys, 2017), whilst group membership maintenance predicted greater life satisfaction, academic performance, and academic retention (Cruwys, Ng, Haslam, & Haslam, 2020). Importantly, SIMIC has been supported in a diverse range of populations undergoing potentially stressful life transitions, including stroke patients (Haslam et al., 2008), post-partum mothers (Seymour-Smith, Cruwys, Haslam, & Brodribb, 2017), people who have experienced trauma (Muldoon et al., 2017), and retirees (Steffens et al., 2016). Thus, SIMIC highlights the importance of multiple group memberships for well-being during stressful life events (including COVID-19 related restrictions; Evans, Cruwys, Cárdenas, Wu, & Cognian, 2022). However, SIMIC has not been evaluated in the context of social anxiety specifically.

Indeed, while the social identity approach has demonstrated utility for many different forms of psychopathology (see Haslam, Jetten, Cruwys, Dingle, & Haslam, 2018), links to social anxiety are less established. There is evidence, however, to suggest that social identities may buffer against stress in social situations. In a relevant empirical study, Häusser, Kattenstroth, van Dick, and Mojzisch (2012) allocated participants to complete a socially-stressful speech task. Prior to this, experimental methods were used to invoke either a shared social identity with other participants or a personal identity (see also Frisch, Häusser, van Dick, & Mojzisch, 2015). Häusser and colleagues found that those who had a shared social identity with the other participants experienced less stress than those in the personal identity condition during the speech task. A shared group membership can also affect the impact of social support. Using the same speech task, Frisch, Häusser, van Dick, and Mojzisch (2014) found that signs of audience members' support like nodding in agreement only reduced stress when the audience shared a group membership with participants. While not explicitly studying social anxiety, these studies suggest that social identification may be protective against social stressors.

A small collection of studies have tested the relationship between social identities and social anxiety more directly (e.g., Haslam et al., 2019; Haslam, Cruwys, Haslam, Dingle, & Chang, 2016; Meuret et al., 2016; Zwertler et al., 2018). Meuret et al. (2016) explored changes in social identification and social anxiety across the course of group CBT for social anxiety disorder. At the end of treatment, patients identified more strongly with people both with, and without, social anxiety. This change was associated with reduced social anxiety severity. Further, Groups 4 Health (G4H)—a manualised intervention aimed at strengthening old, and encouraging new, group memberships—has led to significant reductions in participants' social anxiety symptoms in two trials (Haslam et al., 2016, 2019). In the 2019 randomised controlled trial, participants had a pre-existing mental illness or clinically significant symptoms of mental illness at baseline. Here, 21.4% of participants in the G4H condition showed a clinically significant reduction in social anxiety symptoms, compared to only 5% receiving treatment-as-usual (Haslam et al., 2019). While these studies suggest that social identities may be protective against social anxiety, the specific mechanisms of this change are unknown. It is possible that these changes occur through established benefits of social identities (e.g., via a sense of agency; Greenaway et al., 2016), however, it is also possible that there are mechanisms specific to social anxiety, such as social identity working via effects on anticipatory anxiety and avoidance.

1.4 | The present study

The current study aimed to determine whether multiple group memberships were protective against anticipatory anxiety for, and avoidance of, social situations during the COVID-19 pandemic—a stressful life event characterised by periods of reduced exposure to social situations. Moreover, it aimed to link current cognitive behavioural processes implicated in social anxiety with the social identity approach, and particularly SIMIC, using a longitudinal design. In order to maximise the variance in participants' social anxiety symptoms, the current study used a large online sample. Such samples are considered comparable to community samples in mental health research (e.g., McCredie & Morey, 2019) and allow for the assessment of the full spectrum of social anxiety symptoms. Importantly, conceptualising social anxiety as a dimensional construct is encouraged within the social

anxiety (e.g., Knappe et al., 2009; Ruscio et al., 2008) and mental health (e.g., Haslam, Holland, & Kuppens, 2012) literatures. At Wave 1 (W1; June 2020), participants also completed a baseline measure of their multiple group memberships prior to the pandemic in February 2020; this retrospectively recalled measure has been validated for this purpose and is referred to as Wave 0 (W0) throughout. We also collected data in August (Wave 2 [W2]) and October (Wave 3 [W3]).

The hypotheses were as follows:

Hypothesis 1 (H1): Participants with a greater number of pre-pandemic (W0) group memberships will report lower anticipatory anxiety and avoidance at W1 and W2.

Hypothesis 2 (H2): Changes from participants' multiple group memberships from pre-pandemic (W0) to W2 will predict their W2 anticipatory anxiety and avoidance. Specifically, participants who lose group memberships will experience greater anticipatory anxiety and avoidance at W2, whereas participants who maintained group memberships will experience the opposite. The rationale for using W0 instead of W1 multiple group memberships as a covariate was twofold. First, the nature of people's social relationships likely changed throughout the COVID-19 pandemic; therefore, we needed a pre-pandemic baseline of their multiple group memberships. Second, this approach allows for a test of H3 using data collected at each timepoint, maximising the number of paths that are tested with a time-lag between measurements.

Hypothesis 3 (H3): After controlling for participants' pre-pandemic (W0) multiple group memberships, those with greater W2 multiple group memberships will experience lower W3 social anxiety mediated via lower W2 anticipatory anxiety and avoidance. Although cognitive behavioural models highlight a pathway from anticipatory anxiety to avoidance (Clark, 2001; Clark & Wells, 1995), people's exposure to social situations and thus their capacity to avoid them was reduced during the COVID-19 pandemic. As this pathway has been disrupted, anticipatory anxiety and avoidance were treated as parallel mediators within this analysis.

2 | METHOD

2.1 | Participants and design

Residents of the United States and United Kingdom were invited to complete a three-wave longitudinal study via *Prolific*, an online recruitment platform, and were remunerated at the standard rate (GBP£5/hour). Both countries implemented policies to prevent viral transmission beginning in March 2020 (Unruh et al., 2022). In the United States, COVID-19 related policy was largely determined at a state-level, with most states declaring a state of emergency in early March and closing non-essential businesses within the month; the timing of additional lockdowns and other policies varied by state, with some states closing non-essential business in July (after cases increased in June; Bergquist, Otten, & Sarich, 2020). The United Kingdom also announced a nationwide mandated lockdown in March (Unruh et al., 2022). W1 occurred in June 2020, and 401 respondents completed the survey; all participants were invited to complete W2 and W3. Of these, 294 and 239 completed the second and third surveys, which were opened for approximately 2 weeks in August and October, respectively. This re-test interval was chosen to allow sufficient time to explore change in participants' social anxiety, which is considered a relatively stable construct (e.g., Beesdo-Baum et al., 2012; Magson et al., 2022), whilst also retaining as many participants as possible and recognising the fast-changing COVID-19 context. A total of 217 respondents completed all three waves, and after removing five low-quality responses, 212 participants remained.¹ Table 1 provides an overview of demographic characteristics. At each wave, approximately two-thirds of participants endorsed

TABLE 1 Demographic characteristics of participants.

Variable	n (%)	
Age <i>M</i> (<i>SD</i> , range)	31.82 (12.31, 18–69)	
Gender		
Male	99 (46.7)	
Female	109 (51.4)	
Other/I'd prefer not to say	4 (1.9)	
Ethnicity		
White/caucasian	141 (66.5)	
Asian	39 (18.4)	
Middle eastern/Arabic	3 (1.4)	
African	16 (7.5)	
Other/mixed	13 (6.1)	
Nationality		
United Kingdom	50 (23.6)	
United States	160 (75.5)	
Dual-citizen	1 (.5)	
Other	1 (.5)	
Education		
Some high school	1 (.5)	
High school certificate	23 (10.8)	
Diploma/certificate	20 (9.4)	
Some university	52 (24.5)	
Bachelor's degree	81 (38.2)	
Post-graduate degree	35 (16.5)	
Formal mental health diagnosis	W1	W3
Yes	67 (31.6)	9 (4.2)
No/I'd prefer not to say	145 (68.4)	203 (95.8)
Anxiety disorder diagnosis		
Yes	41 (19.3)	5 (2.4)
No	171 (80.7)	207 (97.6)
Mood disorder diagnosis		
Yes	36 (17.0)	2 (.9)
No	176 (83.0)	210 (99.1)

Note: Participants were asked whether they had received a formal mental health diagnosis/diagnoses (i.e., from a general practitioner, psychologist, psychiatrist, etc.) at W1. At W3, they were asked whether they had received any *additional* diagnoses since the first survey. Anxiety and mood disorders were manually coded from participants' description of their mental health diagnosis/diagnoses.

clinically-significant social anxiety symptoms (for further details see Supplementary Materials).² Voluntary informed consent was obtained, and ethics approval was provided by the Australian National University (Protocol: 2020/256). The study was also pre-registered (<https://aspredicted.org/z6t5u.pdf>).

2.2 | Measures

Participants completed a large battery of measures as described in the pre-registration, however, only those pertinent to the hypotheses are discussed here.

2.2.1 | Multiple group memberships

The 2-item version of the Exeter Identity Transition Scales (EXITS) was used to assess participants' subjective membership in multiple groups (e.g., "I belong to lots of different groups"; Haslam et al., 2018), with responses ranging from 1 (*Do not agree at all*) to 7 (*Agree completely*). While this scale refers to the number of one's groups, it is a measure developed by social identity researchers to capture both the perceived quantity and quality of group memberships (see Cruwys et al., 2016). Participants reflected on their current multiple group memberships at each wave, and at W1 they completed the EXITS twice. First, they reflected on their group memberships prior to COVID-19 in February 2020, called W0. Immediately after reflecting on their W0 group memberships, participants were asked to reflect on their current group memberships in June 2020, called W1. Prior research has also used the EXITS to measure participants' group memberships retrospectively where it has shown excellent internal consistency (e.g., $\alpha = .93$, Haslam et al., 2008; $\alpha = .95$, Seymour-Smith et al., 2017), good convergent validity (e.g., with new mother's perceptions of the continuity of their group memberships, Seymour-Smith et al., 2017; with group listing tasks, Haslam et al., 2008; with a social identity mapping tool, Bentley et al., 2020; Cruwys et al., 2016), and good predictive validity (e.g., of life satisfaction in stroke patients, Haslam et al., 2008). Like Jetten, Haslam, Pugliese, Tonks, and Haslam' (2010) study, which also used the 2-item EXITS, both items were significantly and positively correlated at all waves (see Table 2).

TABLE 2 Descriptive statistics for study variables.

Variable (possible range)	M (SD)	Actual range	Cronbach's α
EXITS (1–7)			
W0	3.47 (1.65)	1–7	.67 ^a
W1	3.08 (1.53)	1–7	.70 ^a
W2	3.27 (1.53)	1–7	.69 ^a
W3	3.38 (1.54)	1–7	.69 ^a
SIPS (0–56)			
W1	19.44 (13.36)	0–56	.95
W2	18.80 (13.41)	0–56	.95
W3	18.45 (13.15)	0–55	.95
Anticipatory anxiety (0–100)			
W1	62.03 (20.42)	10–100	.83
W2	61.37 (20.39)	3.17–96.33	.83
Avoidance (–3–3)			
W1	.17 (1.25)	–2.83 to –3	.73
W2	.08 (1.15)	–2.50 to –2.83	.68

Abbreviations: EXITS, exeter identity transition scales; SIPS, social interaction phobia scale.
^aAs the EXITS is a two-item scale, Cronbach's α cannot be calculated; instead, the intercorrelations between the two items are reported. All correlations were significant ($p < .001$).

2.2.2 | Anticipatory anxiety

Participants' anticipatory anxiety for a variety of social situations was assessed at W1 and W2. Both the instructions and situations were developed for the current study (see Supplementary Materials). Participants were asked: *Imagine that you will experience each of the following situations within the next week. How anxious would you feel in the lead up to each situation?* The chosen situations, based on commonly reported social fears (see Ruscio et al., 2008), were: having a conversation with an acquaintance or colleague, going to a social gathering or party, disagreeing with someone in front of others, going to a job interview, giving a speech or presentation, and performing in front of others. Participants' anticipatory anxiety for each situation was rated from 0 (*No anxiety*) to 100 (*Maximum anxiety*), and their responses were averaged to form a total score. Internal consistency was good at both waves ($\alpha = .83$ at each wave).

2.2.3 | Avoidance

Avoidance was measured at W1 and W2 using the same six social situations as above (see Supplementary Materials). The instructions were also developed for the current study and were as follows: *Imagine that you will experience each of the following situations within the next week. How likely is it that you would avoid each situation?* Participants' avoidance for each situation was ranged from -3 (*I would never avoid the situation*) to 3 (*I would always avoid the situation*). Responses were averaged to form a total score, which had good internal consistency at W1 ($\alpha = .73$), but was slightly lower at W2 ($\alpha = .68$).

2.2.4 | Social anxiety symptoms

Participants completed the 19-item Social Interaction Anxiety Scale (SIAS) and the 20-item Social Phobia Scale (SPS) by Mattick and Clarke (1998), with responses ranging from 0 (*Not at all characteristic or true of me*) to 4 (*Extremely true or characteristic of me*), at all waves. Although designed as companion measures, the SIAS and SPS have variable factor structures when combined (see Carleton et al., 2009). To address the problem with their factor structure whilst maximising the interpretability of participants' scores, the SIAS and SPS were collapsed into Carleton et al.'s (2009) 14-item scale, called the Social Interaction Phobia Scale (SIPS). The SIPS has a consistent three-factor structure and assesses *social interaction anxiety* (e.g., "When mixing socially I am uncomfortable"), *fear of overt evaluation* (e.g., "I get nervous that people are staring at me as I walk down the street"), and *fear of attracting attention* (e.g., "I am worried people will think my behavior odd"; see Carleton et al., 2009; Menatti et al., 2015; Reilly, Carleton, & Weeks, 2012). The total SIPS scale has shown good internal consistency in previous research (e.g., $\alpha = .92$, Carleton et al., 2009; $\alpha \geq .87$, Menatti et al., 2015) and in the current study ($\alpha = .95$ at each wave), as well as good convergent and discriminant validity across a variety of samples (e.g., Menatti et al., 2015; Reilly et al., 2012).

3 | RESULTS

Given the unprecedented effects of the COVID-19 pandemic, we conducted a series of *t*-tests to better conceptualise changes in our variables across timepoints. For the same reason, we updated our analysis plan, and differences between the results and our pre-registration are flagged below where relevant. We found that participants' multiple group memberships were highest pre-pandemic at W0 ($M = 3.47$, $SD = 1.65$) and significantly lower at W1 ($M = 3.08$, $SD = 1.53$), $t_{W0-W1}(211) = 5.31$, $p < .001$, which is unsurprising given the COVID-19 lockdowns experienced during or just prior to this time. They then recovered gradually at each time-point, and increased significantly from W1 to W2 ($M = 3.27$, $SD = 1.53$), $t_{W1-W2}(211) = -2.16$, $p < .05$. By W3, participants' multiple group

memberships ($M = 3.38$, $SD = 1.54$) were no longer significantly lower than baseline, $t_{W0-W3}(211) = 1.04$, $p = .301$. Participants' social anxiety was highest at W1 ($M = 19.44$, $SD = 13.36$) and lowest at W3 ($M = 18.45$, $SD = 13.15$); this difference was significant, $t_{W1-W3}(211) = 2.19$, $p < .05$. There was no significant difference between participants' W1 and W2 anticipatory anxiety ($M_{W1} = 62.03$, $SD_{W1} = 20.42$; $M_{W2} = 61.37$, $SD_{W2} = 20.39$; $t_{W1-W2}(211) = .80$, $p = .422$) or avoidance ($M_{W1} = .17$, $SD_{W1} = 1.25$; $M_{W2} = .08$, $SD_{W2} = 1.15$; $t_{W1-W2}(211) = 1.22$, $p = .225$). For an overview of descriptive statistics and correlations see Tables 2 and 3, respectively.

3.1 | Hypothesis 1

Linear regressions were used to test H1—whether participants' pre-pandemic (W0) multiple group memberships buffered against their subsequent anticipatory anxiety for, and avoidance of, social situations, see Table 4. Participants' W0 multiple group memberships significantly predicted their anticipatory anxiety at both W1 ($\beta = -.32$, $p < .001$) and W2 ($\beta = -.36$, $p < .001$), $F_{W1}(1, 210) = 23.44$, $p < .001$; $F_{W2}(1, 210) = 30.83$, $p < .001$, explaining 10% and 12.8% of the variance in their anticipatory anxiety, respectively. Participants' W0 multiple group memberships significantly predicted their avoidance at W1 ($\beta = -.30$, $p < .001$) and W2 ($\beta = -.33$, $p < .001$), $F_{W1}(1, 210) = 20.01$, $p < .001$; $F_{W2}(1, 210) = 25.69$, $p < .001$, explaining 8.7% and 10.9% of the variance in their avoidance, respectively. Supporting H1, participants with more group memberships prior to the pandemic experienced less anticipatory anxiety and were less likely to avoid social situations.

3.2 | Hypothesis 2

Linear regressions were used to assess H2, see Table 5. We aimed to determine if *changes* in participants' multiple group memberships over time could explain anticipatory anxiety and avoidance. Initially, we anticipated using participants' W1 MGMs as a baseline variable, however, due to the significant drop in participants' multiple group memberships from W0 to W1, this was not considered a suitable approach. Instead, pre-pandemic (W0) multiple group memberships were entered at Step 1 (replicating the tests of H1 above) and W2 multiple group memberships were entered at Step 2. Participants' W2 anticipatory anxiety and avoidance served as dependent variables. This analysis strategy created a time-lag between our measurement of participants' multiple group memberships. At Step 2, participants' W2 multiple group memberships explained an additional 4.1% of the variance and significantly predicted their W2 anticipatory anxiety ($\beta = -.27$, $p < .01$), $F(2, 209) = 21.33$, $p < .001$. Similarly, at Step 2, participants' W2 multiple group memberships explained an additional 3% of the variance and significantly predicted their W2 avoidance ($\beta = -.23$, $p < .01$), $F(2, 209) = 16.90$, $p < .001$. Consistent with the pre-registration, we also tested the hypothesis entering W0 and W1 multiple group memberships at Steps 1 and 2 (respectively), however, these analyses were non-significant (see Supplementary Materials). Thus, H2 was supported when the relationship between W0 and W2 group memberships was assessed.

3.3 | Hypothesis 3

Hayes' (2018) PROCESS Model 4 was used to test H3, see Figure 1. Here, we aimed to determine if the relationship between multiple group memberships and lower anticipatory anxiety and avoidance could, in turn, predict lower social anxiety symptoms. Like H2 we chose to use W2 instead of W1 multiple group memberships; as with H2, when using W1 multiple group memberships, the test of H3 was non-significant (see Supplementary Materials). Thus, the covariate was pre-pandemic (W0) multiple group memberships, the predictor variable was W2 multiple group memberships, the parallel mediators were W2 anticipatory anxiety and W2 avoidance, and the dependent variable was W3 social anxiety (as measured by the SIPS). Like H2, this analysis focused on the *changes* in participants' multiple

TABLE 3 Correlations for study variables.

Variable	EXITS		SIPS			Anticipatory anxiety		Avoidance	
	W0	W1	W2	W3	W1	W2	W3	W1	W2
EXITS									
W0									
W1	.77***								
W2	.67***	.64***							
W3	.66***	.66***	.73***						
SIPS									
W1	-.26***	-.28***	-.27***	-.31***					
W2	-.25***	-.27***	-.27***	-.32***	.89***				
W3	-.25***	-.29***	-.29***	-.34***	.88***	.91***			
Anticipatory anxiety									
W1	-.32***	-.33***	-.31***	-.35***	.69***	.70***	.72***		
W2	-.36***	-.33***	-.39***	-.41***	.67***	.71***	.70***	.83***	
Avoidance									
W1	-.30***	-.30***	-.29***	-.34***	.53***	.52***	.51***	.56***	.53***
W2	-.33***	-.28***	-.35***	-.36***	.52***	.52***	.52***	.58***	.62***
									.64***

Abbreviations: EXITS, exeter identity transition scales; SIPS, social interaction phobia scale.
*** $p < .001$.

TABLE 4 Regressions coefficients for Hypothesis 1.

Dependent variable	W1			W2		
	B	SE	β	B	SE	β
Anticipatory anxiety	−3.93***	.81	−.32	−4.43***	.80	−.36
Avoidance	−.22***	.05	−.30	−.23***	.05	−.33

*** $p < .001$.

TABLE 5 Regression coefficients for Hypothesis 2.

Variable	B	SE	β	R^2	ΔR^2
Anticipatory anxiety					
Step 1				.13	
Constant	76.75***	3.06			
W0 EXITS	−4.43***	.80	−.36		
Step 2				.17	.04**
Constant	80.84***	3.25			
W0 EXITS	−2.19*	1.05	−.18		
W2 EXITS	−3.63**	1.12	−.27		
Avoidance					
Step 1				.11	
Constant	.88***	.18			
W0 EXITS	−.23***	.05	−.33		
Step 2				.14	.03**
Constant	1.08***	.19			
W0 EXITS	−.12*	.06	−.18		
W2 EXITS	−.18**	.07	−.23		

Abbreviation: EXITS, exeter identity transition scales.

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

group memberships from W0 to W2. Further, by including W2 anticipatory anxiety and avoidance as parallel mediators, their relative contributions could be assessed. Consistent with the test of H2, changes in participants' multiple group memberships from W0 to W2 significantly predicted both their W2 anticipatory anxiety ($\beta = -.27, p < .01$) and W2 avoidance ($\beta = -.23, p < .01$), such that membership in multiple groups was associated with lower anticipatory anxiety and avoidance. In turn, both W2 anticipatory anxiety ($\beta = .62, p < .001$) and W2 avoidance ($\beta = .14, p < .05$) predicted greater W3 social anxiety. The indirect pathway via W2 anticipatory anxiety was significant, $IE = -.17, SE = .05, 95\%$ Confidence Interval (CI) $[-.27, -.08]$, but the indirect pathway via W2 avoidance was not, $IE = -.03, SE = .02, 95\%$ CI $[-.08, .001]$. This finding provides partial support for H3—participants' multiple group memberships from W0 to W2 largely protected against future social anxiety via reductions in anticipatory anxiety, but not avoidance.³

4 | DISCUSSION

The current study aimed to determine whether multiple group memberships would buffer against anticipatory anxiety and avoidance in a time of reduced exposure (the COVID-19 pandemic), with flow-on benefits for social anxiety.

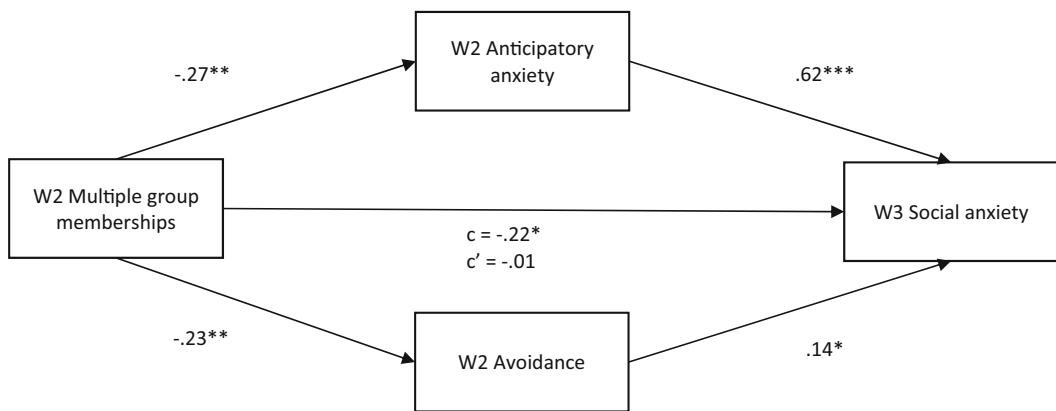


FIGURE 1 Mediation analysis for Hypothesis 3. Participants' pre-pandemic (W0) multiple group memberships were entered as a covariate. The indirect effect via W2 anticipatory anxiety, $IE = -.17$, $SE = .05$, 95% CI $[-.27, -.08]$ was significant, whereas the indirect effect via W2 avoidance was not, $IE = -.03$, $SE = .02$, 95% CI $[-.08, .001]$. All coefficients are standardised. * $p < .05$; ** $p < .01$; *** $p < .001$.

In doing so, it also aimed to link cognitive behavioural processes implicated in social anxiety to the social identity approach, and particularly SIMIC. Greater pre-pandemic multiple group memberships predicted lower anticipatory anxiety and avoidance during the pandemic (H1). Further, participants' capacity to *maintain* pre-pandemic group memberships predicted lower anticipatory anxiety and avoidance during the pandemic (H2). Finally, participants who maintained group memberships experienced lower subsequent anticipatory anxiety which, in turn, predicted lower social anxiety (H3).

4.1 | Theoretical implications

The current study has several implications for both clinical and social-psychological theorising. First, the direct pathway from avoidance to subsequent social anxiety was positive and significant, which is consistent with multiple models of social anxiety (e.g., Clark & Wells, 1995; Rapee & Heimberg, 1997) and suggests that avoidance remains an important factor in social anxiety's maintenance. However, the effect sizes for avoidance were smaller than those for anticipatory anxiety for all analyses, which also suggests that while the COVID-19 pandemic may have *simulated* the avoidance of social situations, it did not necessarily lead to a *desire* to avoid them. Indeed, this is consistent with Ho and Moscovitch's (2022) findings whereby people with the greatest social anxiety symptoms reported greater efforts to connect with others during the COVID-19 pandemic. Thus, the smaller effects for avoidance may simply be due to reduced socialisation overall, which by extension also yields reduced opportunity to (intentionally) avoid social situations. This research also highlights the importance of understanding other maintaining factors like anticipatory anxiety. The direct pathway from anticipatory anxiety to social anxiety was also positive and significant, consistent with Clark and Wells' (1995) model.

The current research provides support for a social identity approach to social anxiety. In particular, the findings across H2 and H3 suggest that participants who were better able to maintain their group memberships during a period of substantial upheaval experienced less anticipatory anxiety, avoidance, and later social anxiety. This provides additional support for SIMIC, which highlights the importance of maintaining valued group memberships during stressful life events (Jetten et al., 2012). This capacity to maintain group memberships is particularly important in contexts like the COVID-19 pandemic, when people's social connections were directly threatened. Indeed, Cruwys, Haslam, Rathbone, Williams, and Haslam (2021) found that participants who had

completed G4H before the COVID-19 pandemic were better protected against depression and loneliness than those who completed CBT. Further, these results also build upon previous research (e.g., Haslam et al., 2019; Meuret et al., 2016), which has implied the potential value of the social identity approach in the study of social anxiety.

This research was also the first study that sought to integrate the social identity approach with cognitive behavioural models of social anxiety. Our findings are consistent with a growing body of evidence which suggests that focal cognitive behavioural variables are altered by social-psychological processes (e.g., Cruwys, Haslam, Fox, & McMahon, 2015; Cruwys, South, Greenaway, & Haslam, 2015). For example, two longitudinal studies among vulnerable populations—patients receiving group CBT for depression or anxiety, or people experiencing homelessness—found that identification with a new group membership predicted reduced subsequent endorsement of maladaptive schema (Cruwys et al., 2014). The current results also highlight the need for greater attention to client's social relationships, and particularly forms of group-based belonging, within therapy. For example, during early exposure work, sharing an ingroup identity with audience members may support a client's ability to engage in the activity (building on Häusser et al., 2012). However, at later stages of therapy, an outgroup audience—that is, people who do *not* share a group membership with the client—may be used to make an exposure more challenging. Together, this body of research speaks to the *socially structured* nature of cognition and the focal constructs in cognitive behavioural models.

4.2 | Clinical implications

For people with social anxiety, the effects of the COVID-19 pandemic were likely paradoxical. On the one hand, reduced exposure to social situations may have assuaged their anxiety symptoms in the short term. Yet, because avoidance maintains social anxiety (e.g., Clark & Wells, 1995; Rapee & Heimberg, 1997), such reduced exposure may ultimately lead to an exacerbation of people's social anxiety symptoms over time and upon re-entering social situations, consistent with emerging research (e.g., McLeish et al., 2022). In fact, a recent study found that undergraduates during the COVID-19 pandemic maintained elevated social anxiety scores (Arad et al., 2021), which contrasts with pre-pandemic findings, when social anxiety tended to decline across the academic year. To address this avoidance-exposure link, clinicians have outlined ways to effectively transition from in-person treatment of social anxiety into online therapy, including creative ways to continue exposure-work and conduct behavioural experiments (e.g., Khan, Bilek, Tomlinson, & Becker-Haimes, 2021; Warnock-Parkes et al., 2020). However, our results also suggest that targeting anticipatory anxiety should be an important component of such treatment. In treatment based on Clark and Wells' model, the pros and cons of engaging in anticipatory processing are discussed with clients and, ultimately, its use is explicitly discouraged (see Warnock-Parkes et al., 2020; Wells, 1997). For some people, applying this strategy may be difficult, especially when a feared situation is imminent (e.g., the end of a COVID-19 lockdown). Additional research is needed to shed light on effective ways to therapeutically target anticipatory anxiety. However, this study suggests that social identities may be a potential target for exploration in future studies.

These findings do create challenges for clinicians working with people who have social anxiety: boosting group-based connections may ameliorate social anxiety, but, at the same time, efforts to target this clinically may be anxiety-provoking. Previous studies (Frisch et al., 2014; Häusser et al., 2012) provide some reassurance here—a salient, supportive, and shared social identity may enhance people's ability to engage in social situations. In addition to this, when we share a social identity, we perceive social situations differently, which may alter our cognitive processes and willingness to engage in such situations. Finally, across two studies, the G4H intervention has resulted in significant reductions in participants' social anxiety symptoms (Haslam et al., 2016, 2019). Together, this research highlights the potential for group-based social connection as a novel way forward in the prevention and treatment of social anxiety.

4.3 | Limitations and future directions

While this study had multiple strengths—including its emphasis on integrating distinct clinical and social traditions and its longitudinal design—it is not without limitations. First, we experienced a decline in our sample size across our timepoints; this problem is not uncommon in longitudinal research and may have been exacerbated by participant fatigue, given the plethora of research conducted during the COVID-19 pandemic (Patel, Webster, Greenberg, Weston, & Brooks, 2020). Second, the COVID-19 pandemic also likely had differing impacts on our participants. For example, COVID-19 related policy was implemented at state-level in the United States but was nation-wide in the United Kingdom (Unruh et al., 2022). Equally, participants' individual experiences during 2020 likely differed within the same country, with US research suggesting that not all people experienced the COVID-19 pandemic as negative (Mills, Petrovic, Mettler, Hamza, & Heath, 2022). Participants' pre-pandemic social anxiety symptoms, anticipatory anxiety, and avoidance could not validly be measured retrospectively, which means that they could not be controlled for within our analyses. It is also possible that our measurement of anticipatory anxiety and avoidance were confounded with participants' fears of the COVID-19 pandemic more broadly. However, health anxiety and social anxiety have been found to be only weakly correlated in prior research (e.g., Abramowitz et al., 2007); we also aimed to minimise this potential confound by utilising previously validated social situations (see Ruscio et al., 2008). Similarly, it is possible that our retrospective (i.e., W0) measurement of multiple group memberships may have been influenced by participants' current (i.e., W1) response; to mitigate against this, participants completed the W0 measure of multiple group memberships before the W1 measure. The opposite of this is also true—reflecting on pre-pandemic (W0) group-based connections immediately before reporting current (W1) group-based connections may have made salient the challenges in maintaining these connections in the early stages of the COVID-19 pandemic; it is possible that this reduced the validity of the W1 multiple group membership measure, which might be one reason for its non-significant relation with W2 anticipatory anxiety and avoidance (see Supplementary Materials). Additionally, causal relationships cannot be conclusively determined without experimental research designs, which would increase our confidence in the direction of our findings. For example, the salience of people's multiple group memberships could be manipulated, such as reflecting on one versus three group memberships (see Cruwys, South, et al., 2015), before engaging in an anxiety-provoking situation like a speech task. Given the results of our study, alongside the evidence of efficacy of the G4H intervention at reducing social anxiety (Haslam et al., 2016, 2019), it would also be useful to assess the utility of the G4H program among a population of socially anxious individuals and with measurement of social anxiety-specific variables.

5 | CONCLUSION

This longitudinal study found that multiple group memberships buffered against subsequent anticipatory anxiety, which in turn predicted reduced social anxiety symptoms, within a COVID-19 context. Moreover, we found initial evidence to suggest that multiple group memberships predicted less subsequent avoidance of social situations. By combining the social identity approach with cognitive behavioural models of social anxiety (e.g., Clark & Wells, 1995; Rapee & Heimberg, 1997) this study found evidence for the socially structured nature of cognitive behavioural variables. It also highlights the potential role of social identity loss in the maintenance of social anxiety, and by extension, the potential role of social identity gain in the prevention and treatment of social anxiety through theoretically driven interventions like G4H (Haslam et al., 2016, 2019). Overall, these findings suggest that, particularly during times of change, our capacity to connect with others is a crucial determinant of our mental health.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ORCID

Jessica L. Donaldson  <https://orcid.org/0000-0001-8752-2423>

ENDNOTES

- ¹ Responses were deemed low-quality if participants failed multiple attention checks and did not engage with an interactive social identity mapping task (see Bentley et al., 2020; Cruwys et al., 2016). We also used binary logistic regression to determine which participants at W1 were likely to go on and complete future waves, $\chi^2(24, N = 375) = 38.49, p = .031$; older participants ($B = .04, p = .006$) and female-identifying (versus male-identifying) participants ($B = .53, p = .025$) were more likely to be retained at follow-up waves.
- ² Although the quantity of participants with clinically-significant social anxiety symptoms was assessed, our analyses treated participants' responses continuously as research suggests that both social anxiety symptoms (e.g., Knappe et al., 2009; Ruscio et al., 2008) and, indeed anxiety disorders more broadly (see Haslam et al., 2012), are best conceptualised as dimensional constructs.
- ³ We also tested H3 using the individual SIAS and SPS scales (Mattick & Clarke, 1998), which produced highly similar results to that reported in-text (see Supplementary Materials). In fact, the only notable difference between these analyses was that when the SIAS served as the dependent variable, both IEs were significant (i.e., including the pathway via W2 avoidance).

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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