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LOCKDOWN

Mental health trajectories during the Covid-19 Lockdown: evidence for resilience and the role of
psychological resources and flexibility

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Abstract

The implementation of lockdowns and the Covid-19 pandemic situation have negatively impacted mental health (anxiety, depression). However, little is known about individual differences in the longitudinal reactions to lockdown. We designed a longitudinal study (a) to identify the various trajectories of symptoms of depression and anxiety in the general population under and out of lockdown; (b) to determine which positive psychological resources prevent individuals from falling into groups with the most severe trajectories; (c) to test the mediating role of psychological flexibility. We collected data on a heterogeneous sample of French participants (N = 1144) during the end of the first lockdown (from 17 March to 11 May 2020). Participants were asked to report their psychological resources, psychological flexibility and symptoms of anxiety and depression weekly for five weeks. Growth mixture modelling enabled identifying dynamic profiles of symptoms: four for depression, three for anxiety. Resilience emerged as the most frequent trajectory. Wisdom, optimism, hope, and peaceful disengagement significantly prevented adherence to the symptomatic groups. Moreover, psychological flexibility emerged as a significant mediator of these effects. This study highlights the importance of cultivating protective factors and psychological flexibility to prevent mental health damage during potentially traumatic events (PTE) and favour resilience trajectories.

Keywords: mental health; Covid-19 lockdown; resilience; psychological resources; psychological flexibility

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1 Introduction

There is growing evidence that the Covid-19 pandemic situation degraded mental health in the general population¹. Lockdowns effectively reduce the circulation of the virus². Such measures are so extreme, in terms of restrictions of liberty and disruption of social interactions, that they can lead to further deterioration in mental health and well-being³⁻⁷. While previous studies have shown that people differ considerably in their responses to potentially traumatic events (PTEs) and that most people appear to be relatively resilient to them⁸, to date little is known about the heterogeneity of mental health responses to lockdown. Following a short examination of the resilience construct, we consider the recent literature about psychological functioning during lockdown and pandemic situations, suggesting the existence of individual differences in anxiety and depression trajectories. Among protective factors, we argue that the availability of psychological resources can explain individual differences in resilience. Finally, we propose that psychological flexibility may mediate the positive effects of psychological resources. We then report a longitudinal empirical investigation during and after the French lockdown to put those hypotheses to the test.

1.1 Psychological resilience in the Covid-19 pandemic context

The study of resilience has received more and more attention, with very different theoretical and operational approaches⁹. Some conceptualise resilience as a dynamic process causing positive adaptation¹⁰ or as an individual disposition to bounce back from adversity¹¹. In this paper, resilience is seen as the result of longitudinal psychological adjustment following PTEs. The maintenance of mental health and well-being during and after acute, short-term stressors has been termed ‘minimal-impact resilience’, as opposed to ‘emergent resilience’, which is long-term adaptation following persistent stressful contexts¹². Because lockdown is intended to be temporary, resilience is understood here precisely in the sense of minimal-impact resilience. Therefore, we relied on Bonanno to define resilience as ‘the ability of adults in otherwise normal circumstances who are exposed to an isolated and potentially highly disruptive event... to maintain relatively stable, healthy levels of psychological and physical functioning’ (p. 20)¹³.

Covid-19 has been shown to have a significant impact on mental health¹. Studies have shown that people in lockdown were more likely to suffer from depression and anxiety than before the pandemic^{14,15}. Quarantine, prolonged quarantine especially, showed adverse psychological effects, such as post-traumatic stress, confusion, anger, fear of infection, frustration, boredom, inadequate supplies and information, financial loss and stigma¹⁶. The first lockdown in France (from 17 March to 11 May), as for many countries, combined many aggravating factors, such as a particularly long duration (1 month and 25 days) and bad public attitudes around its implementation [i.e., perceived excessive media coverage of the pandemic, substantial economic damage and poor communication from the authorities¹⁷]. In this respect, the pandemic and lockdown contexts undoubtedly represent a PTE that has a negative impact on mental health.

The study of resilience during the first lockdown has a non-negligible barrier. Observing psychological reactions or non-reaction to PTEs requires longitudinal designs, i.e., multiple assessments¹⁸. Ideally, the measurement should be done three different times: before, during and after the PTE¹⁹. In that manner, the resilient outcome can be referenced to a baseline to observe the short-term and long-term impacts of PTEs. However, the first lockdown implementation was not predictable, preventing researchers from investigating individuals' baseline mental health before the lockdown. Studying a lockdown followed by unlockdown might serve as a relevant way to compare lockdown and not-lockdown situations. The moment of unlockdown might also be of particular interest and has been relatively understudied. People may differ in their mental reactions near the end of the lockdown. For example, unemployed people might experience decreased anxiety and depression in response to an actual or anticipated unlockdown. Conversely, teleworking employees might undergo increased anxiety as they approach the time to return to their workplace - particularly those who use public transportation where contamination is possible. We use the term '(un)lockdown' throughout the paper to refer to the longitudinal process of lockdown and then out of lockdown.

As aforementioned, longitudinal analyses are necessary to examine the developmental trend of psychopathological symptoms or resilience during (un)lockdown^{18,19}. A recent review of available studies associated with the Covid-19 pandemic provides a good picture of the general trends of mental health trajectories²⁰. For example, the trajectories of anxiety and depression of a large and representative sample of English citizens progressively decreased for 20 weeks after the start of lockdown, with the steepest decrease during the period of strictest lockdown²¹. However, approaches used to date have only assessed the average population trajectory and failed to capture the heterogeneity of individuals' mental health trajectories²². Pre-pandemic research on PTE impact uncovered the existence of not one single but several distinct trajectories of anxiety

and depression in the same population²³⁻²⁶. Such diversity might also hold in the pandemic and (un)lockdown contexts so that limiting the analysis to general population trends may mask substantive particularities. George Bonnano's team studied various contexts involving psychological adaptation to an aversive disruptive event such as the death of a spouse or the World Trade Center attack^{27,28}. According to Bonanno, in the case of minimal-impact resilience, the main trajectories are *resilience* (characterised by little change in normal functioning over time), *recovery* (which implies a significant change in psychological functioning before a return to normal), *delayed response* (little change during the aversive event before the appearance of a delayed deleterious change in psychological functioning), and the state of *chronic disruption* (maintenance of a dysfunctional psychological state over the long term)¹³. A review of studies found that most individuals' clinical trajectories after PTEs followed a pattern of resilience (65.7% across populations), followed by recovery (20.8%), chronicity (10.6%) and delayed responses (8.9%)⁸.

The present study aimed at evaluating group differences in anxiety and depression trajectories in the context of (un)lockdown. More generally, as pre-Covid studies did, we expected to find groups differing in substantive and persistent symptomatology. More precisely, we predicted that individuals would differ substantively in how they will react to (un)lockdown in terms of depression and anxiety symptomatology. However, a significant proportion of individuals would be resilient (H1).

While a significant proportion of people are generally resilient in the face of an aversive disruptive event, the role of positive psychological resources that promote the trajectory of resilience is relatively unexplored.

1.2 The positive psychological resources favouring resilience in terms of anxiety and depression

One of the main questions that resilience theory might tackle is: why would some persons be affected by the (un)lockdown and the general pandemic context but not others? When comparing the resilient group with the others (i.e., with groups whose individuals report symptoms above the symptomatologic threshold at least at one point during the study period), the predictor variables can be considered risk factors or protective variables, depending on the relationship direction. Previous studies on resilience to PTEs have found many such factors: demographics, exposure, personality, social and economic resources, past and current stress, positive emotions, coping and appraisal, flexibility and genes^{12,22}. In general, there are no predominant resilience factors against one particular PTE but rather multiple factors with relatively small effects¹². For example, research on resilience in the face of natural disasters associated with climate change has found numerous factors, such as distal and proximal exposure to climate disasters, individual characteristics (demographics, biological vulnerability, personality coping and emotion regulation, social support), family and community²⁹. Therefore, researchers were prompted to include many potentially relevant factors to find the best resilience profiles in the Covid-19 pandemic³⁰.

With the development of positive psychology, there is growing evidence that positive mental dispositions or strengths of character contribute to human fulfilment in a wide range of areas^{31,32}. In particular, many positive psychology constructs have proven to be effective in improving well-being and relieving the symptoms of depression and anxiety³³⁻³⁵. A recent study evaluated mental resilience during the Covid-19 pandemic and found that good stress response recovery and positive appraisal were the strongest protective factors³⁶. However, this study did

not operationalise resilience longitudinally. The authors analysed cross-sectional data only and limited their scope to few selected psycho-social resources. A longitudinal study conducted during the French lockdown of the Covid-19 pandemic uncovered a set of psychological resources that increased various forms of happiness³⁷. The notion of psychological resources referred to positive mental dispositions that contribute to personal well-being and resilience. Based on three criteria (the relation of the resource with well-being had to be theoretically and empirically established and a psychometrically sound instrument had to be available for the resource), nine well-studied psychological resources were selected: self-efficacy³⁸; optimism³⁹; hope⁴⁰; personal wisdom⁴¹; self-transcendence⁴²; gratitude toward the world⁴³; gratitude of being⁴⁴; peaceful disengagement⁴⁴; and acceptance⁴⁵. Results showed that most of these constructs had protective effects on well-being, enhancing happiness averages and reducing the lockdown's negative impact and perceived economic and health threats³⁷. Interestingly, various happiness dimensions (emotional, psychological, social and inner well-being) had their own set of protecting variables. Therefore, it can be expected that positive psychological resources also differently influence depression and anxiety trajectories during and after PTEs.

In this study, we sought to identify psychological resources that are protective against the symptomatologic trajectories of depression and anxiety in the context of (un)lockdown and the Covid-19 pandemic. Most of the resources mentioned above have been selected for this purpose. Overall, we propose to examine the protective role of psychological resources by testing their ability to predict a trajectory of resilience compared to a symptomatologic trajectory in terms of anxiety or depression. Specifically, we predicted that most of the psychological resources previously identified would increase the likelihood of a resilience trajectory and decrease the likelihood of a trajectory symptomatic of anxiety or depression. Finally, we hypothesised that

psychological flexibility was a mediating process explaining the effects of psychological resources on resilience.

1.3 Psychological flexibility as a mediating process

Psychological flexibility is a broad concept that reflects a person's ability to easily adapt their cognition and behaviour according to their needs⁴⁶. Part of psychological flexibility is regulatory (or coping) flexibility - that is, the ability to adapt one's behaviour in response to the demands of the environment⁴⁷. This construct has been identified as a key to emerging resilience against PTEs in general⁴⁷ and also potentially in the Covid-19 crisis and lockdowns in particular³⁰. The construct of psychological flexibility is also embedded in the Acceptance and Commitment Therapy (ACT) principles, the third wave of Cognitive and Behavioral Therapy, although it somehow differs from regulatory flexibility. We propose that the two approaches do not contradict each other, but instead are complementary in explaining how and why people respond differently to ETPs.

ACT defends the core principle that negative experiences such as stress, loss or pain are inevitable. People engaged in a fight against these aversive experiences tend to reinforce their negative aspects and keep individuals away from valued and meaningful action⁴⁸. In ACT, psychological flexibility is viewed as the ability to stay in contact with the present moment, noticing and accepting the way feelings, bodily sensations, and thoughts arrive while doing what matters in agreement with one's own values⁴⁸. Psychological inflexibility is characterised by rigid cognitive, emotional and behavioural functioning, in which individuals facing stressful situations react and act while trying to control and avoid internal and external negative experiences (bodily sensations, thoughts, feelings)⁴⁹. This approach seems particularly relevant to better understanding psychological processes that develop and maintain psychological distress in this pandemic context^{50,51} and to proposing effective interventions for people⁵⁰. Indeed, psychological flexibility has been identified as a transdiagnostic process involved in the emergence and

maintenance of several emotional disorders such as depression, anxiety and suicidal risk^{52,53}. Psychological flexibility and inflexibility are considered as close but distinct processes that are not just two extremes on the same continuum⁵⁴. Psychological flexibility is related to better mental health, self-compassion and well-being^{55,56}. Some studies have even approached psychological flexibility as a resilience factor for individuals with post-traumatic stress disorder, depression or chronic pain^{52,57}. Some psychological resources promoting resilience, such as optimism, hope and self-efficacy, are related to psychological flexibility⁵⁸. This variable also appeared as a mediator between the fear of negative evaluation and psychological vulnerability⁵⁹ or between childhood aversive events and mental health outcomes⁶⁰. More recently, and directly related to the pandemic situation, showed that psychological inflexibility and optimism/pessimism were found to mediate the relationship between coronavirus stress and psychological health⁶¹. Moreover, they found that psychological inflexibility mediates the relationship between optimism-pessimism and psychological problems in adults (i.e., depression, anxiety, somatisation). We propose that psychological flexibility would be one of the best predictors of a resilient trajectory and that the effect of psychological resources on resilience would be mediated, at least partly, by psychological flexibility (H3).

2 Methods

2.1 Participants and procedure

All procedures performed in these studies were reviewed and approved by the ethic committee of Toulouse University (Comité d’Ethique de la Recherche (CER), Université Fédérale de Toulouse). The study has been performed in accordance with the Declaration of Helsinki. The participants provided their informed consent to participate in this study.

We recruited volunteers via an advertisement on social networks in France during the beginning of the first lockdown. A total of 1402 participants fully completed the first questionnaire and provided their email addresses (wave 1). This questionnaire included questions about individual characteristics and contexts and measures of psychological resources, psychological flexibility, and depression and anxiety indexes. Then, each week for four weeks, participants were prompted to respond to a shorter questionnaire that included the depression and anxiety indexes (waves 2 to 5). We only kept individuals who responded to at least two waves for the subsequent analyses ($N = 1144$). Table 1 presents the demographics of the participants for each wave.

2.2 Materials

2.2.1 Depression and anxiety.

Both depression and anxiety were assessed using the Hospital Anxiety Depression Scale (HADS)⁶². The HADS comprises seven items using a Likert scale that captures the frequency of experiences from 0 ('never') to 3 ('almost always'). Summing anxiety and depression items gives scores that can serve to identify depression and anxiety symptomatology⁶². Scores of 7 or less indicate no symptomatology, scores of 8 to 10 signal doubtful cases, and scores of 11 and above denote definite symptomatic cases. Cronbach alphas were satisfactory for depression ($\alpha = .84$) and anxiety ($\alpha = .79$).

2.2.2 Psychological resources.

All psychological resources were measured at the first wave using Likert scales ranging from 1 = 'strongly disagree' to 7 = 'strongly agree'.

2.2.2.1 Hope, optimism, and self-efficacy.

We assessed hope (e.g., 'If I should find myself in a jam, I could think of many ways to get out of it'), optimism (e.g., 'I am looking forward to the life ahead of me'), and self-efficacy (e.g., 'I am confident that I could deal

efficiently with unexpected events’) using the Compound-Psychological-Capital questionnaire (CPC-12)⁶³. Reliabilities were satisfactory for hope ($\alpha = .73$), optimism ($\alpha = .79$), and self-efficacy ($\alpha = .81$).

2.2.2.2 *Personal wisdom.* Personal wisdom was assessed with the 12-Item Abbreviated Three-Dimensional Wisdom Scale (3D-WS-12)⁶⁴, which uses four items to measure each of three dimensions of wisdom, as theorized by Ardel⁶⁵: cognitive (e.g., ‘A problem has little attraction for me if I don’t think it has a solution.’), affective (e.g., ‘Sometimes I feel a real compassion for everyone’), and reflective (e.g., ‘When I am confused by a problem, one of the first things I do is survey the situation and consider all the relevant pieces of information’). The personal wisdom measure was marginally reliable ($\alpha = .63$.)

2.2.2.3 *Self-transcendent wisdom.* Self-transcendent wisdom was assessed using the most recently published version of the Adult Self-Transcendence Inventory (ASTI)⁶⁶. The classical version of the ASTI measured self-transcendence as a single dimension⁴².⁶⁶ used a mixed-method procedure to assess the ASTI dimensionality, including item evaluations by wisdom and psychometric experts and quantitative analysis using item response theory. They found five non-overlapping dimensions: ‘self-knowledge and integration,’ ‘peace of mind,’ ‘non-attachment,’ ‘self-transcendence,’ and ‘presence in the here-and-now and growth.’ We used all seven items of the self-transcendence dimension as a measure of self-transcendent wisdom (e.g., ‘I feel that my individual life is part of a greater whole.’, $\alpha = .76$).

2.2.2.4 *Gratitude toward the world.* The 6-item Gratitude Questionnaire (GQ-6)⁴³ was used to assess dispositional gratitude (e.g., ‘I have so much in life to be thankful for,’ or ‘I am grateful to a wide variety of people’). This measure had adequate reliability in our sample ($\alpha = .78$).

2.2.2.5 Gratitude for being and peaceful disengagement. We used the Minimalist Well-Being Scale to assess gratitude for being and peaceful disengagement⁴⁴. Four items captured the disposition to be grateful for just being (e.g., ‘I feel grateful that I am alive’), and seven items captured peaceful disengagement (e.g., ‘It feels good to do nothing and relax’). Both construct reliabilities were satisfactory (gratitude for being: $\alpha = .83$; peaceful disengagement: $\alpha = .78$).

2.2.3 Psychological flexibility. We used two measures of psychological flexibility.

- Psychological flexibility was assessed with the Acceptance and Action Questionnaire II (AAQII)⁴⁹. This seven-point Likert scale (from 1 = ‘never true’ to 7 = ‘always true’) measures acceptance and action, two core constructs of psychological flexibility, with a score totaled over 10 items (e.g., ‘My thoughts and feelings do not get in the way of how I want to live my life’). Participants with higher total scores experience higher levels of psychological flexibility ($\alpha = .87$).
- Psychological inflexibility was assessed with the Avoidance and Fusion Questionnaire for adults (AFQ)⁶⁷. This four-point Likert scale (from 0 = ‘not true at all’ to 4 = ‘very true’) comprises items measuring the degree of adherence to 17 statements (e.g., ‘I can’t stand feeling pain or hurt in my body’) reflecting experiential avoidance and cognitive fusion. The 17 items were aggregated to provide a total score ($\alpha = .87$). Higher scores correspond to higher levels of psychological inflexibility.

2.2.4 Control variables: lockdown context. Participants reported the quality of their lockdown situation regarding the quality of their environment, relationships, and solitude.

The quality of the physical environment in which they lived during the lockdown was assessed using a 5-point Likert scale (1 = ‘extremely bad’, 5 = ‘extremely good’). Solitude was assessed by asking whether the participant was alone in his home during the lockdown. Individuals who reported not being alone in their homes rated the quality of their relationships with the people with whom they were locked in using a 5-point Likert scale (1 = ‘extremely bad,’ 5 = ‘extremely good’). People alone in lockdown were not presented with this question and, not to disturb analyses, the missing value was replaced by the neutral response (‘neither good nor bad’).

2.3 Data analysis

R⁶⁸ was used for all analyses. The data and R scripts of the analyses are available online in an open directory (https://osf.io/q2e6h/?view_only=d70ce492923b432aa11af06c06c3ebd8).

To identify distinct groups in trajectories of depression and anxiety, we performed growth mixture modelling with the *hlme* function of the *lcmm* package⁶⁹. Growth mixture modelling (GMM) can be seen as a combination of latent class growth analysis and linear mixed modelling^{70,71}. Latent class growth analysis (LCGA) relies on the latent growth curve modelling approach in which repeated variables are used to estimate latent intercepts (i.e., the level on the variable at the first time point) and slopes (i.e., the rate of change in the outcome over time) for each individual. Then, individuals with similar intercept and slope parameters are classified into subgroups. LCGA is a particular case of GMM in which no within-group variance of the parameters is allowed. In other words, all individuals’ growth trajectories are assumed to be that of the group, but it is unlikely that this assumption holds true with empirical data. GMM is more flexible as it enables specific intercept and slope parameters to be random, in the same manner as the linear mixed modelling framework.

Because we expected trajectories to change during the (un)lockdown process for some classes, a quadratic slope was estimated along with the intercept and the linear slope. We used the following steps to select the best number of latent classes. 1) We computed 1 to 7 classes for a set of models with increasingly complex random structures: no random structure; random intercept only; random intercept and linear slope; and random intercept, linear and quadratic slopes. 2) Using the Bayesian information criterion (BIC), the first six models on all 28 possibilities with the best fit were selected and plotted along with their fit indices for comparison. 3) Finally, the best model was selected following these criteria: a) best fit in terms of BIC; b) classes not too small (i.e., each class had to represent at least 5% of the total sample); c) the classes had to represent meaningful trajectories and each new complexity level had to provide relevant new information. Three authors (the first, second and last) deliberated and decided the best model based on these criteria.

To test H2, class membership was predicted by fitting multinomial logistic regression models using the *multinom* function of the *nnet* package⁷² in a two-step process. The multinomial logistic regression models provided odds ratios that indicate the probabilities of being assigned to each class rather than the reference class. We first calculated zero-ordered models for each independent variable as unique predictors of class membership. Only variables that showed to be a significant predictor for at least one class membership in the zero-ordered models were entered in the models. In the first step, all psychological resources, except psychological flexibility, and control variables such as age and sex were simultaneously entered. In the second step, psychological inflexibility and flexibility were added. A significant effect of a variable in steps 1 and 2 was not reported in the text of the result section if the corresponding zero-order effect is either (1) non-significant or (2) in the opposite direction. Variance inflation factors (VIF) have been calculated with the *car* package's *vif* function⁷³.

Finally, we tested H3 using the method described in Iacobucci (2012)⁷⁴, which provides general guidance for the mediation analysis with categorical variables. The method consists of calculating the indirect path ('ab path') using estimates and standard errors of the effect of the independent variable on the mediator ('a path') and of the mediator on the dependent variable ('b path'). In our data, the *a* path parameters were inferred from a linear regression model with psychological flexibility as DV and all psychological resources entered as predictors. The *b* path parameters came from step 2 of the multinomial logistic regression described above. We only tested the mediation model for a combination of IV, mediator, and DV when both the total effect of the IV on the DV (i.e., the effect of the psychological resource on class membership in step 1) and the *b* path (i.e., the effect of psychological flexibility on class membership on step 2) were significant. When one of these paths was not significant, we assumed that the mediation was not significant⁷⁵.

3 Results

Means, standard deviations, VIF and correlations of the study variables are presented in Table 2. All VIF were below the cutoff of 3, indicating that multicollinearity was not an issue⁷⁶.

3.1 Analyses of trajectories

3.1.1 Depression trajectories.

Table 3 presents the six best models (BIC, parsimony indices, entropy and class distribution). The trajectories of all classes for the six models are provided in supplemental materials (Figure S1). The four best-fitting models of depression had random intercepts only, with numbers of classes ranging from 4 to 7. Three out of the six classes of the best model had sample sizes below the 5% cutoff. The second best-fitting model had four classes similar to those in model 1, but two small groups. Only one small group

($N = 21$, 1.8%) was still present in the 4-class model. This small group was systematically present in the five best-fitting models and described a meaningful and relevant trajectory of depression (depression levels linearly increase with time). Although the third to fifth best-fitting models showed parsimony indices very similar to the second's, they had one too small cluster or more. Their additional clusters did not bring substantive new information over the second best-fitting model, which also had the best entropy value (i.e., 80). Therefore the second best-fitting model, with four classes and random intercept, was identified as the best solution.

Figure 1 presents the trajectories of the selected model. Table 4 provides the fixed parameters estimates for each class. The four clusters identified are described as follows. Individuals in cluster D1, referred to as 'persistent depression symptomatology' ($N = 116$, 10.1%), have levels of depression above the symptomatic threshold in all waves with a slight initial increase until release and a relative recovery, close to the symptomatic level in wave 5. Cluster D2, 'increasing depression' ($N = 21$, 1.8%), characterises people with initially asymptomatic levels of depression (though close to 8) and a depressive tendency steadily increasing, reaching the symptomatic threshold before the date of unlockdown and never ceasing to worsen until the end of data collection. This group represents people who experienced the unlockdown negatively but were not relieved by the unlockdown. Cluster D3, 'no depression symptomatology' ($N = 874$, 76.4%), includes people with non-symptomatic levels of depression throughout the whole data collection. This group is also characterised by a slight decrease in depression levels over time. Finally, cluster D4, 'decreasing depression' ($N = 133$, 11.6%), includes individuals who initially exhibited severe depression but whose symptoms progressively disappeared, so they had reached non-symptomatic levels of depression in wave 5.

3.1.2 Anxiety trajectories. Table 3 shows the parsimony indices and class distributions of the six best-fitting growth mixture models of anxiety. Class trajectories of these models can be found in the supplemental materials (Figure S2). The first three best-fitting models had random intercept and linear slope parameters for three to five clusters. The best-fitting model had three clusters of adequate size (14.8%, 57.5%, 27.7%, respectively). The second model had four classes, three classes identical to the first model and one additional weakly populated class (3.1%). Similarly, the third model had five classes, four almost identical to the second model's, plus one new small class (3.2%). More generally, models 2-6 presented at least one small class. Although not fitting at best in term of AIC and SABIC, we decided to retain the first model, with three classes, random intercept and slope, which provide well distributed classes and few categories.

Figure 2 presents the predicted trajectories from the selected model. Table 4 presents the fixed parameters estimates for each class. The A1 cluster, 'anxiety reaction' ($N = 169$, 14.8%), represents people who started below the symptomatic threshold in anxiety, increased to symptomatic levels around the unlockdown, and came back to their initial level two to three weeks later. Cluster A2, 'no anxiety symptomatology' ($N = 658$, 57.5%), includes people who presented no anxiety problems from the beginning to the end of the assessments. Cluster A3, named 'anxiety symptomatology with improvement' ($N = 317$, 27.8%), characterised people who started with high levels of anxiety - beyond symptomatic threshold - and saw their anxiety slowly decrease, particularly after the end of lockdown.

3.2 Multinomial logistic regressions

3.2.1 Predicting depression trajectories. Table 5 presents the odds ratios from the multinomial logistic models of depression trajectories for classes D1, D2 and D4 with the no

depression symptomatology class (D3) as the reference group. All variables appeared to significantly predict at least one class membership in the zero-ordered models. Therefore, all variables were included in the subsequent models. Note that we do not report or discuss any significant effect on a particular class for a variable that was not significant or in the opposite direction in the respective zero-ordered model. The two steps in the table depict the two nested models with psychological resources and demographic variables in step 1 and adding psychological (in)flexibility in step 2. Odds ratios > 1 indicate that increases in the predictor variable make it likelier to be in the target class than in the reference class. In other words, a significant odds ratio < 1 indicates a protective effect of the predictor against adherence to the corresponding symptomatologic class. In contrast, a significant odds ratio > 1 indicates an adverse effect of that variable, implying a greater chance of adherence to the corresponding symptomatologic class. We only tested whether psychological flexibility would mediate the effects of a specific psychological resource on class membership when the effect of the psychological resource on psychological flexibility in step 1 was significant.

Let us consider the effects of the psychological resources for each of the symptomatologic clusters. In step 1, people were less likely to adhere to the group with persistent depression symptomatology (class D1) with better initial scores of wisdom, optimism and peaceful disengagement. In step 2, wisdom and optimism effects were not significant anymore, and psychological flexibility showed very strong protective effects. Mediation analysis revealed that psychological flexibility mediated class membership for wisdom ($z = -6.19; p < .001$), optimism ($z = -2.21; p < .05$) and peaceful disengagement ($z = -4.18; p < .001$).

Optimism appeared to be a protective variable in reducing the probability to adhere to the group of increasing depression (class D2) in step 1 and remained relatively stable in step 2.

Psychological flexibility appeared as a significant protective variable in step 2 but did not significantly mediate the effects of optimism ($z = -1.5$; $p = 0.07$). Note that this class gathered very few people ($N = 21$). These results should be interpreted with caution.

Finally, adherence to the decreasing depression group (class D4) in step 1 was negatively predicted by wisdom, optimism, hope and peaceful disengagement. Only psychological flexibility and peaceful disengagement were significant protective variables in step 2. Again, wisdom ($z = -4.44$; $p < .001$), optimism ($z = -2.07$; $p < .05$), hope ($z = -3.62$; $p < .001$) and peaceful disengagement ($z = -1.94$; $p < .05$) effects were significantly mediated by psychological flexibility. In contrast, initial levels of psychological inflexibility increased the chance to be part of that group (zero-ordered effect of gratitude of being was in the opposite direction). Psychological inflexibility appeared as a mediator for the effects of wisdom ($z = -3.62$; $p < .001$), hope ($z = -2.76$; $p < .01$) and peaceful disengagement ($z = -2.86$; $p < .01$) but not for optimism ($z = -1.31$; $p = 0.09$).

3.2.2 Predicting anxiety trajectories. Table 6 presents the odds ratios from the two stepped multinomial logistic models with no anxiety problem as the reference group. All variables appeared to significantly predict at least one class membership in the zero-ordered models and were thus included in steps 1 and 2.

Concerning adherence to the anxiety reaction group (class A1), wisdom, optimism and peaceful disengagement appeared as protective variables in step 1. In step 2, wisdom was not significant anymore, and optimism and peaceful disengagement effects did not change much. Psychological flexibility appeared to be protective and to significantly mediate the effects of wisdom ($z = -2.49$; $p < .01$), optimism ($z = -1.66$; $p < .05$) and peaceful disengagement ($z = -2.26$; $p < .05$) in the expected direction.

Participants were less likely to be in the anxiety symptomatology with improvement group (class A3) with more wisdom, optimism, hope and peaceful disengagement in step 1. In step 2, psychological flexibility emerged as a significant protective variable and a significant mediator for wisdom. Only the wisdom effect appeared to be strongly reduced when controlling for psychological flexibility, although still significant. Psychological flexibility significantly mediated the effects of wisdom ($z = -2.85; p < .01$), optimism ($z = -1.77; p < .05$), hope ($z = -2.58; p < .01$) and peaceful disengagement ($z = -2.52; p < .01$). Psychological inflexibility promoted adherence to this group at all steps and significantly mediated the effects of wisdom ($z = -2.91; p < .01$), hope ($z = -2.39; p < .01$) and peaceful disengagement ($z = -2.45; p < .01$) in the expected direction, but not for optimism ($z = -1.25; p = 0.11$).

4 Discussion

One of the main goals of this longitudinal study was to investigate patterns of individual differences in depression and anxiety in the context of an (un)lockdown process, and then to gain insight into the psychological resources that may promote resilience in such contexts. A preliminary step, therefore, was to test for the existence of such differences and the presence of identifiable patterns of resilience. The next step was to investigate the predictors of membership in the different models. We briefly discuss the results of the preliminary stage before turning to the question of underlying psychological resources.

4.1 Most individuals were resilient to (un)lockdown (H1)

The majority of respondents presented resilient trajectories, with low scores of depression (76.4%) and anxiety (57.5%) during (un)lockdown. Only 23.6% of our sample presented symptomatological trajectories for depression but 42.5% for anxiety. This finding is consistent

with previous studies on minimal-impact resilience, in that most people respond to PTE with resilience, with a higher mean prevalence across studies for depression (59.1%) than for anxiety (52.7%)⁸.

Respectively, 10.1% and 27.7% of participants exhibited chronic levels of depression and anxiety. In the chronic anxiety group, anxiety tended to decrease with time, with a steeper slope after unlockdown. On the contrary, chronic depression appeared to increase until the end of lockdown and then to decrease. Another group (11.6% of participants) manifested a drastic decrease in depression during the entire (un)lockdown. Together, these results indicate that lockdown had a substantive impact on anxiety and depression levels in a significant proportion of people, most of them trending back to a baseline asymptomatic level at about the end of the lockdown or some time afterward. In other words, the lockdown might have had a negative impact on people's mental health, and when people were released from lockdown or anticipated it, they tended to recover. However, in the absence of data recorded prior to the lockdown, caution should be taken before concluding that it is the lockdown itself that had a particular impact on mental health¹⁸. The first lockdown was not predictable, but the pandemic situation seems to persist and new lockdowns may be imposed. An interesting approach would be to assess people's mental health from the time a lockdown is announced until the lockdown has ended.

Interestingly, 2% of depression trajectories showed an increase in symptoms throughout the (un)lockdown process, and 14.8% of anxiety trajectories showed a rapid increase peaking just after the unlockdown, then a rapid decrease. Analyses of daily activities showed that participants of these two groups were less likely to work outside their home during the lockdown than teleworking at home. As a result, these individuals may have enjoyed the experience of lockdown, for example, by being free from external duties, so that the return to normal life would

become a stressful experience. These results confirm our hypothesis of individual differences in responses to unlockdown, some experiencing it as a stressful event and others not.

This leads to a potential limitation of the methodological approach used here. Some authors argued that resilience must be inferred as a function of the interaction between experienced stressors and mental health over time⁷⁷. Under such a view, one might not agree to characterise as ‘resilient’ people who displayed good mental health if they had not experienced lockdown as a stressful event in the first place. In contrast, our approach consisted in uniformly inferring resilience from good mental health, regardless of how individuals initially responded to the potential stressor constituted by the pandemic and lockdown situation. A similar approach was applied in a lockdown context³⁶. Our point is to consider that the ability to cope easily with stressful events is an integral part of resilience, which justifies studying the resources underlying this ability and led us to put the following hypothesis to the test. Additionally, the time frame of the study was limited to the first French (un)lockdown. As mentioned in the introduction, only minimal-impact resilience can be studied following acute PTE - that is, the manner with which individuals tend to see their well-being as not impacted during the process¹². As the pandemic situation tends to be long-lasting, it would be important to evaluate emergent resilience also¹², i.e., how individuals reconfigure their habits and well-being in response to a lasting change in their environment.

4.2 Positive psychological resources predict resilient trajectories (H2)

Wisdom, optimism, hope and peaceful disengagement consistently predicted adherence to the resilient trajectories over the symptomatologic trajectories, even after controlling for demographic variables (see step 1 in Tables 5 and 6). The other psychological resources showed no effects when controlled by other resources. In most cases, wisdom appeared to be the strongest

protective variable among the psychological resources and was associated with improved resilience against almost any other symptomatology classes. To our knowledge, no studies have been specifically dedicated to the evaluation of the impact of wisdom on mental health. Available evidence in the literature has shown that wisdom and well-being were positively related, with a stronger relationship when people are facing adversity⁴¹. The second most powerful protective psychological resource was peaceful disengagement, which is a detached and tranquil attitude toward external accomplishments. It was related to resilience against almost all other symptom categories. This variable was associated with more decline of well-being over time during lockdown³⁷. This suggests that peaceful disengagement may be a good strategy for protecting mental health during (un)lockdown, probably because it helps people to disengage from stressful demands. Optimism was consistently associated with increased likelihood of the resilience class over other classes, yet with a lower odd ratio magnitude than wisdom and peaceful disengagement. In particular, the depression with improvement class (D2) was only predicted by optimism.

It should be noted that optimism has many denotations. Here, optimism was assessed as a disposition towards positive expectations. It was associated most with depression, whereas optimism as a sense of invulnerability was associated the most with anxiety⁷⁸. The last protective found resource was hope, which was only significantly associated with resilience against the decreasing depression (D4) and the chronic anxiety (A3) trajectory classes. These two classes shared a high initial level of mental illness with a progressive improvement through time. We might assume that hope would be a better predictor of recovery than resilience, meaning that hope would not protect mental health when the stressful situation has occurred when controlled by other resources, but it does help one to recover more quickly.

These findings are consistent with previous research showing that positive mental dispositions are strong predictors of resilient trajectories in the face of PTEs¹². Interestingly, the positive psychological resources we identified as protective were consistent with regard to their relationships to anxiety and depression, but draw a picture somewhat different from previous findings related to well-being during lockdown³⁷. In the latter study, emotional well-being was positively predicted by hope, gratitude of being and acceptance; psychological well-being by self-efficacy, personal wisdom and gratitude of being; social well-being only by gratitude toward the world and inner well-being by optimism, gratitude of being and acceptance. However, the earlier study did not attempt to predict resilient trajectories but only the main effects of these resources on well-being intercepts and slopes, as well as their moderation of the effects of perceived health and economic threats. To our knowledge, the present study is the first to jointly test the protective effects of a wide range of psychological resources in response to PTEs with resilient trajectories as an outcome. A nice avenue of research would be to evaluate whether those psychological resources would be consistently protective with other PTEs, as well as promoting other mental health or well-being trajectory outcomes. Indeed, we do not claim exhaustivity; some relevant positive psychological resources have not been tested in this study, such as mindfulness⁷⁹, self-compassion⁸⁰, etc.

Besides psychological resources, certain sociodemographic and environmental factors exhibited a significant positive relationship with resilience. Age, relationship quality and ‘not being alone’ were positively associated with resilience to depression, whereas being male, the environment, and relationship quality were positively associated with resilience to anxiety (however the strength of the effects vary across symptomatologic classes). Working outside appeared as a risk factor for anxiety and depression trajectories. These results add to the

literature, which persistently showed that trajectories are moderated by positive psychological resources, demographic characteristics and environmental factors⁸.

4.3 Psychological flexibility mediates the protective effects of psychological resources (H3).

It has been hypothesised that psychological flexibility - the individual disposition to have (or not) the capacity to adapt one's psychological thoughts and behaviour to the situation - may mediate the protective effects of psychological resources. We have seen that psychological flexibility appeared to be consistently more powerfully related to resilient trajectories than psychological resources (see step 2 in Tables 5 and 6). The same was true for psychological inflexibility in the expected direction, but it was only significantly related to the decreasing depression and anxiety symptomatology groups.

All in all, psychological flexibility appeared to be an important mechanism mediating the relation between psychological resources and depression. However, the number of mediated effects depended on the psychological resources and the mental health outcome considered. We speak of total mediation when the respective psychological resource is not significant in step 2, and of partial mediation otherwise (see Tables 5 and 6). Wisdom effects were almost always totally mediated by psychological flexibility. Only its direct prediction against chronic anxiety was still significant at step 2, although much of its effect was apparently mediated. Wisdom was the best predictor of psychological flexibility when controlling for all psychological resources (see Tables S1 and S2).

Hope and optimism showed a similar pattern when considering the anxiety and depression classes separately. Mediation of psychological flexibility tended to be stronger with trajectories

of depression than with anxiety. Optimism was significantly and fully mediated by psychological flexibility for the persistent and decreasing depression classes (D1 and D4). Hope also appeared totally mediated for the decreasing depression class (D4). In contrast, optimism was not mediated for the increasing depression class (D2) and was only weakly and partially mediated for the anxiety symptomatology classes. This finding is in line with a previous study during the pandemic, where both optimism/pessimism and psychological flexibility significantly mediated coronavirus stress effects on a composite factor of psychological problems, including depression and anxiety⁶¹. Hope was also only weakly and partially mediated with the improved anxiety class (A3). This suggests that psychological flexibility is an important mechanism in the relationship between optimism and hope with depression trajectories, but not so much for anxiety. Finally, peaceful disengagement was always significantly, but not totally and not strongly, mediated by psychological flexibility. Thus, the mediating mechanism explaining class membership may differ from one psychological resource to another. For some resources, such as wisdom, the psychological flexibility mediation appears particularly relevant. Central to personal wisdom, as construed here, is the reflective dimension, which is precisely the individual propensity to step back and look at phenomena from different perspectives⁶⁵. An alternative mechanism between psychological factors and minimal impact resilience, such as the unexplained optimism and hope effects on anxiety trajectories, is the positive appraisal of potential stressors⁸¹. Accordingly, the positive reappraisal mechanism was found for optimism⁸², hope⁸³ and gratitude⁸⁴. Also, mindfulness meditation has been shown to be robustly associated with positive functioning through positive reappraisal^{85,86}. The combination of the two mediation mechanisms might explain much of the effects of psychological resources. For example, protective effects of hope on post-traumatic growth in adolescents following an earthquake were found to be mediated by both acceptance and positive reappraisal⁸⁷. However, we are not aware of a study evaluating

conjointly the two mechanisms with multiple psychological resources, and more longitudinal studies will be needed to better understand the mechanism of the resilience factors.

These results are in line with other Covid-19 and lockdown studies that have shown a predominant mediating role of psychological flexibility for the preservation of mental health^{88,89}. The proposed mediation mechanism held very well, with most protective effects of psychological resources passing through better psychological flexibility. Psychological inflexibility appeared generally less related to mental health trajectories and mediated the effects of psychological resources to a lesser extent than psychological flexibility. Psychological inflexibility and flexibility had mutual relationships but are independent processes^{54,90}. According to the Hexaflex model, psychological in/flexibility is respectively underpinned by six interdependent core processes (i.e., 12 dimensions). In this article, the two scales used to assess psychological in/flexibility (i.e., AFQ and AAQ) measured distinct processes: experiential avoidance and cognitive fusion for AFQ, and acceptance and action for AAQ. In the literature, studies showed different implications of these six core dimensions depending on the measure used and the outcomes explored⁹⁰. In addition, these two measures are rarely used simultaneously, which makes it difficult for researchers to distinguish which one dimension of in/flexibility influences trajectories of mental health, and which more distal factors (psychological resources in our case) can be involved in this relationship. Our findings are consistent with the distinct role of psychological flexibility and inflexibility and with that acceptance and action, more than experiential avoidance and cognitive fusion, as protective processes, potentialising the role of positive psychological resources assessed. Moreover, the majority of our sample followed a resiliency trajectory, suggesting the predominance of a psychological flexibility pattern.

Some researchers tend to explore the role of psychological in/flexibility on mental health and the factors promoting the different dimensions of psychological in/flexibility. Mindfulness, for example, appears to be one of these resources to buffer cognitive fusion and promote mental health⁹¹. Self-compassion also plays a distal role on depressive symptoms through the avoidance process⁹². In the case of the Covid-19 pandemic, a mediating role of psychological flexibility has been found between the disposition to be anxious about one's health and health outcomes (anxiety and depression)⁹³. The measure of each psychological in/flexibility dimension and their respective determinants to explain mental health trajectories appear to be particularly relevant to discriminate what specific treatments can be proposed according to specific mental health trajectories. A global catastrophic event such as the Covid-19 pandemic highlights the importance of exploring the proximal and distal mechanisms explaining interindividual differences in susceptibility to lockdown situations. Concretely, the study of Kashdan⁹⁴ is an example consistent with the idea that trauma-related distress can generate health benefits (i.e., post-traumatic growth and meaning) only if individuals do not avoid their thoughts, feelings and sensations following the trauma. Consequently, identifying psychological factors that would reduce experiential avoidance could be a promising avenue to design interventions to foster mental health.

Some limitations of the mediation inference remain to be noted. Psychological resources and flexibility were measured simultaneously in the first wave. This design prevented us from inferring causality and might alter the true longitudinal mediation estimates⁹⁵. For a better test of the mediation mechanism, the independent, dependent and mediating variables should all be measured at least three times, allowing for the estimation of the lagged paths. A more general limitation of this study is that our sample was mainly composed of female and French participants, preventing generalisability of the results to the entire population. It would be

important to see if the results could be replicated with more representative samples and other cultures as well.

5 Conclusion

In this longitudinal study during and after the first French lockdown, we investigated the protective roles of psychological resources and flexibility on mental health trajectories. Results have shown that the majority of people displayed resilient depression and anxiety trajectories. Four psychological resources, namely wisdom, optimism, hope and peaceful disengagement, predicted adherence to the resilient class, and much of these protective effects appeared to be mediated, at least partially, by psychological flexibility. This study showed how, in a real situation, individuals' positive psychological dispositions are important for the preservation of mental health in lockdown. The results may be relevant to the prevention of mood disorders in such situations. It is our hope that this study has pointed to the necessity of promoting psychological resources development in normal times so that mental health can be protected in difficult times come.

6 References

1. Vindegaard, N. & Benros, M. E. COVID-19 pandemic and mental health consequences: Systematic review of the current evidence. *Brain, Behavior, and Immunity* **89**, 531–542 (2020).
2. Flaxman, S. *et al.* Estimating the effects of non-pharmaceutical interventions on COVID-19 in europe. *Nature* **584**, 257–261 (2020).
3. Brodeur, A., Clark, A. E., Fleche, S. & Powdthavee, N. Assessing the impact of the coronavirus lockdown on unhappiness, loneliness, and boredom using google trends. (2020).
4. Greyling, T., Rossouw, S. & Adhikari, T. *A tale of three countries: How did Covid-19 lockdown impact happiness?* <https://www.econstor.eu/bitstream/10419/221748/1/GLO-DP-0584.pdf> (2020).
5. Chen, B., Sun, J. & Feng, Y. How have COVID-19 isolation policies affected young people’s mental health? Evidence from Chinese college students. *Frontiers in Psychology* **11**, (2020).
6. Rossi, R. *et al.* COVID-19 pandemic and lockdown measures impact on mental health among the general population in italy. *Frontiers in Psychiatry* **11**, 790 (2020).
7. White, R. G. & Boor, C. V. D. Impact of the COVID-19 pandemic and initial period of lockdown on the mental health and well-being of adults in the UK. *BJPsych Open* **6**, (2020).

8. Galatzer-Levy, I. R., Huang, S. H. & Bonanno, G. A. Trajectories of resilience and dysfunction following potential trauma: A review and statistical evaluation. *Clinical Psychology Review* **63**, 41–55 (2018).
9. McCleary, J. & Figley, C. R. Resilience and trauma: Expanding definitions, uses, and contexts. *Traumatology* **23**, 1–3 (2017).
10. Luthar, S., Cicchetti, D. & Becker, B. The construct of resilience: A critical evaluation and guidelines for future work. *Child development* **71** **3**, 543–62 (2000).
11. Youssef, C. M. & Luthans, F. Positive organizational behavior in the workplace. *Journal of Management* **33**, 774–800 (2007).
12. Bonanno, G. A. & Diminich, E. D. Annual research review: Positive adjustment to adversity: Trajectories of minimal-impact resilience and emergent resilience. *Journal of Child Psychology and Psychiatry* **54**, 378–401 (2012).
13. Bonanno, G. A. Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *The American psychologist* **59** **1**, 20–8 (2004).
14. Pierce, M. *et al.* Mental health before and during the COVID-19 pandemic: A longitudinal probability sample survey of the UK population. *The Lancet Psychiatry* **7**, 883–892 (2020).
15. Shanahan, L. *et al.* Emotional distress in young adults during the covid-19 pandemic: Evidence of risk and resilience from a longitudinal cohort study. *Psychological Medicine* 1–10 (2020) doi:[10.1017/S003329172000241X](https://doi.org/10.1017/S003329172000241X).

16. Brooks, S. *et al.* The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. *Lancet (London, England)* **395**, 912–920 (2020).
17. Peretti-Watel, P. *et al.* Attitudes about covid-19 lockdown among general population, france, march 2020. *Emerging infectious diseases* **27**, 301–303 (2021).
18. Kalisch, R. *et al.* The resilience framework as a strategy to combat stress-related disorders. *Nature Human Behaviour* **1**, 784–790 (2017).
19. Bonanno, G. A., Romero, S. A. & Klein, S. I. The temporal elements of psychological resilience: An integrative framework for the study of individuals, families, and communities. *Psychological Inquiry* **26**, 139–169 (2015).
20. Banks, J., Fancourt, D. & Xiaowei, X. Mental health and the covid-19 pandemic. in *World happiness report 2021* (eds. Helliwell, J. F., Layard, R., Sachs, J. D. & De Neve, J. E.) 108–130 (Sustainable Development Solutions Network, 2021).
21. Fancourt, D., Steptoe, A. & Bu, F. Trajectories of anxiety and depressive symptoms during enforced isolation due to covid-19: Longitudinal analyses of 36,520 adults in england. *medRxiv* (2020) doi:[10.1101/2020.06.03.20120923](https://doi.org/10.1101/2020.06.03.20120923).
22. Long, K. & Bonanno, G. A. An integrative temporal framework for psychological resilience. in *The biology of early life stress* (eds. Noll, J. G. & Shalev, I.) 121–146 (Springer International Publishing, 2018). doi:[10.1007/978-3-319-72589-5_8](https://doi.org/10.1007/978-3-319-72589-5_8).
23. Rzewuska, M., Mallen, C. D., Strauss, V. Y., Belcher, J. & Peat, G. One-year trajectories of depression and anxiety symptoms in older patients presenting in general practice with

- musculoskeletal pain: A latent class growth analysis. *Journal of Psychosomatic Research* **79**, 195–201 (2015).
24. Rhebergen, D. *et al.* Course trajectories of unipolar depressive disorders identified by latent class growth analysis. *Psychological Medicine* **42**, 1383–1396 (2012).
25. Rhebergen, D. *et al.* Older age is associated with rapid remission of depression after electroconvulsive therapy: A latent class growth analysis. *The American Journal of Geriatric Psychiatry* **23**, 274–282 (2015).
26. Skipstein, A., Janson, H., Stoolmiller, M. & Mathiesen, K. S. Trajectories of maternal symptoms of anxiety and depression. A 13-year longitudinal study of a population-based sample. *BMC Public Health* **10**, 589–589 (2010).
27. Bonanno, G. A. *et al.* Resilience to loss and chronic grief: A prospective study from preloss to 18-months postloss. *Journal of Personality and Social Psychology* **83**, 1150–1164 (2002).
28. Bonanno, G. A. & Jost, J. T. Conservative shift among high-exposure survivors of the september 11th terrorist attacks. *Basic and Applied Social Psychology* **28**, 311–323 (2006).
29. Chen, S., Bagrodia, R., Pfeffer, C. C., Meli, L. & Bonanno, G. A. Anxiety and resilience in the face of natural disasters associated with climate change: A review and methodological critique. *Journal of Anxiety Disorders* **76**, 102297 (2020).

30. Chen, S. & Bonanno, G. A. Psychological adjustment during the global outbreak of COVID-19: A resilience perspective. *Psychological Trauma: Theory, Research, Practice, and Policy* **12**, S51–S54 (2020).
31. Compton, W. C. & Hoffman, E. *Positive psychology*. (SAGE Publications, 2019).
32. Peterson, C., Seligman, M. E. & others. *Character strengths and virtues: A handbook and classification*. vol. 1 (Oxford University Press, 2004).
33. Sin, N. L. & Lyubomirsky, S. Enhancing well-being and alleviating depressive symptoms with positive psychology interventions: A practice-friendly meta-analysis. *Journal of clinical psychology* **65** **5**, 467–87 (2009).
34. Bolier, L. *et al.* Positive psychology interventions: A meta-analysis of randomized controlled studies. *BMC Public Health* **13**, 119–119 (2013).
35. Avey, J. B., Wernsing, T. S. & Mhatre, K. A longitudinal analysis of positive psychological constructs and emotions on stress, anxiety, and well-being. *Journal of Leadership & Organizational Studies* **18**, 216–228 (2011).
36. Veer, I. M. *et al.* Psycho-social factors associated with mental resilience in the corona lockdown. *Translational Psychiatry* **11**, (2021).
37. Pellerin, N. & Raufaste, E. Psychological resources protect well-being during the covid-19 pandemic: A longitudinal study during the french lockdown. *Frontiers in Psychology* **11**, 3200 (2020).
38. Bandura, A. Self-efficacy. in *The Corsini encyclopedia of psychology* 1–3 (American Cancer Society, 2010). doi:[10.1002/9780470479216.corpsy0836](https://doi.org/10.1002/9780470479216.corpsy0836).

39. Carver, C. S., Scheier, M. F. & Segerstrom, S. C. Optimism. *Clinical psychology review* **30**, 879–889 (2010).
40. Snyder, C. R. Hope theory: Rainbows in the mind. *Psychological Inquiry* **13**, 249–275 (2002).
41. Ardel, M., Pridgen, S. & Nutter-Pridgen, K. L. Wisdom as a personality type. in *The Cambridge handbook of wisdom* (eds. Sternberg, R. J. & Glück, J.) 144–161 (Cambridge University Press, 2019). doi:[10.1017/9781108568272.008](https://doi.org/10.1017/9781108568272.008).
42. Levenson, M. R., Jennings, P. A., Aldwin, C. M. & Shiraishi, R. W. Self-transcendence: Conceptualization and measurement. *The International Journal of Aging and Human Development* **60**, 127–143 (2005).
43. McCullough, M. E., Emmons, R. A. & Tsang, J.-A. The grateful disposition: A conceptual and empirical topography. *Journal of personality and social psychology* **82**, 112 (2002).
44. Kan, C., Karasawa, M. & Kitayama, S. Minimalist in style: Self, identity, and well-being in japan. *Self and Identity* **8**, 300–317 (2009).
45. Lindsay, E. K. & Creswell, J. D. Mechanisms of mindfulness training: Monitor and acceptance theory (MAT). *Clinical psychology review* **51**, 48–59 (2017).
46. Kashdan, T. B. & Rottenberg, J. Psychological flexibility as a fundamental aspect of health. *Clinical psychology review* **30** **7**, 865–78 (2010).
47. Bonanno, G. A. & Burton, C. L. Regulatory flexibility. *Perspectives on Psychological Science* **8**, 591–612 (2013).

48. Hayes, S., Luoma, J., Bond, F., Masuda, A. & Lillis, J. Acceptance and commitment therapy: Model, processes and outcomes. *Behaviour research and therapy* **44** 1, 1–25 (2006).
49. Bond, F. *et al.* Preliminary psychometric properties of the acceptance and action questionnaire-ii: A revised measure of psychological inflexibility and experiential avoidance. *Behavior therapy* **42**, 676–688 (2011).
50. A-Tjak, J. G. L. *et al.* A meta-analysis of the efficacy of acceptance and commitment therapy for clinically relevant mental and physical health problems. *Psychotherapy and Psychosomatics* **84**, 30–36 (2014).
51. Crasta, D., Daks, J. S. & Rogge, R. D. Modeling suicide risk among parents during the covid-19 pandemic: Psychological inflexibility exacerbates the impact of covid-19 stressors on interpersonal risk factors for suicide. *Journal of Contextual Behavioral Science* **18**, 117–127 (2020).
52. Bryan, C., Ray-Sannerud, B. & Heron, E. A. Psychological flexibility as a dimension of resilience for posttraumatic stress, depression, and risk for suicidal ideation among air force personnel. *Journal of contextual behavioral science* **4**, 263–268 (2015).
53. Masuda, A. & Tully, E. C. The role of mindfulness and psychological flexibility in somatization, depression, anxiety, and general psychological distress in a nonclinical college sample. *Journal of Evidence-Based Complementary & Alternative Medicine* **17**, 66–71 (2012).

54. Grégoire, S. *et al.* Validation of the english and french versions of the multidimensional psychological flexibility inventory short form (mpfi-24). *Journal of contextual behavioral science* **18**, 99–110 (2020).
55. Marshall, E. & Brockman, R. The relationships between psychological flexibility, self-compassion, and emotional well-being. *Journal of Cognitive Psychotherapy* **30**, 60–72 (2016).
56. Wersebe, H., Lieb, R., Meyer, A., Hofer, P. & Gloster, A. The link between stress, well-being, and psychological flexibility during an acceptance and commitment therapy self-help intervention. *International Journal of Clinical and Health Psychology : IJCHP* **18**, 60–68 (2018).
57. Gentili, C. *et al.* Psychological flexibility as a resilience factor in individuals with chronic pain. *Frontiers in Psychology* **10**, (2019).
58. Woldgabreal, Y., Day, A. & Ward, T. Linking positive psychology to offender supervision outcomes. *Criminal Justice and Behavior* **43**, 697–721 (2016).
59. Uğur, E., Kaya, Ç. & Tanhan, A. W. Psychological inflexibility mediates the relationship between fear of negative evaluation and psychological vulnerability. *Current Psychology (New Brunswick, N.j.)* 1–13 (2020).
60. Makriyianis, H. M. *et al.* Psychological inflexibility mediates the relationship between adverse childhood experiences and mental health outcomes. *Journal of contextual behavioral science* **14**, 82–89 (2019).

61. Arslan, G., Yıldırım, M., Tanhan, A., Buluş, M. & Allen, K.-A. Coronavirus stress, optimism-pessimism, psychological inflexibility, and psychological health: Psychometric properties of the coronavirus stress measure. *International Journal of Mental Health and Addiction* 1–17 (2020).
62. Zigmond, A. S. & Snaith, R. P. The hospital anxiety and depression scale. *Acta Psychiatrica Scandinavica* **67**, 361–370 (1983).
63. Lorenz, T., Beer, C., Pütz, J. & Heinitz, K. Measuring psychological capital: Construction and validation of the Compound PsyCap scale (CPC-12). *PLOS ONE* **11**, 1–17 (2016).
64. Thomas, M. L., Bangen, K. J., Ardel, M. & Jeste, D. V. Development of a 12-item abbreviated three-dimensional wisdom scale (3D-WS-12): Item selection and psychometric properties. *Assessment* **24**, 71–82 (2017).
65. Ardel, M. Empirical assessment of a three-dimensional wisdom scale. *Research on Aging* **25**, 275–324 (2003).
66. Koller, I., Levenson, M. R. & Glück, J. What do you think you are measuring? A mixed-methods procedure for assessing the content validity of test items and theory-based scaling. *Frontiers in Psychology* **8**, 126 (2017).
67. Schmalz, J. E. & Murrell, A. R. Measuring experiential avoidance in adults: The avoidance and fusion questionnaire. *International Journal of Behavioral Consultation and Therapy* **6**, 198–213 (2010).
68. R Core Team. *R: A language and environment for statistical computing*. (R Foundation for Statistical Computing, 2020).

69. Proust-Lima, C., Philipps, V. & Liquef, B. Estimation of extended mixed models using latent classes and latent processes: The R package lcmm. *Journal of Statistical Software* **78**, 1–56 (2017).
70. Palardy, G. & Vermunt, J. Multilevel growth mixture models for classifying groups. *Journal of Educational and Behavioral Statistics* **35**, 532–565 (2010).
71. Berlin, K. S., Parra, G. R. & Williams, N. A. An introduction to latent variable mixture modeling (part 2): Longitudinal latent class growth analysis and growth mixture models. *Journal of Pediatric Psychology* **39**, 188–203 (2013).
72. Venables, W. N. & Ripley, B. D. *Modern applied statistics with s*. (Springer, 2002).
73. Fox, J. & Weisberg, S. *An R companion to applied regression*. (Sage, 2019).
74. Iacobucci, D. Mediation analysis and categorical variables: The final frontier. *Journal of Consumer Psychology* **22**, 582–594 (2012).
75. Baron, R. M. & Kenny, D. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology* **51** 6, 1173–82 (1986).
76. O’Brien, R. M. A caution regarding rules of thumb for variance inflation factors. *Quality & Quantity* **41**, 673–690 (2007).
77. Kalisch, R. *et al.* A generic solution for the operationalization and measurement of resilience and resilience processes in longitudinal observations: Rationale and basic design of the marp and lora studies. in (2020). doi:[10.31234/osf.io/jg238](https://doi.org/10.31234/osf.io/jg238).

78. Kleiman, E. M. *et al.* Optimism and well-being: A prospective multi-method and multi-dimensional examination of optimism as a resilience factor following the occurrence of stressful life events. *Cognition and Emotion* **31**, 269–283 (2015).
79. Hanley, A. W., Garland, E. L. & Tedeschi, R. G. Relating dispositional mindfulness, contemplative practice, and positive reappraisal with posttraumatic cognitive coping, stress, and growth. *Psychological Trauma: Theory, Research, Practice, and Policy* **9**, 526–536 (2017).
80. Karatzias, T. *et al.* Is self-compassion a worthwhile therapeutic target for ICD-11 complex PTSD (CPTSD)? *Behavioural and Cognitive Psychotherapy* **47**, 257–269 (2018).
81. Kalisch, R., Müller, M. B. & Tüscher, O. A conceptual framework for the neurobiological study of resilience. *Behavioral and Brain Sciences* **38**, (2014).
82. Slattery, McMahon, J. & Gallagher, S. Optimism and benefit finding in parents of children with developmental disabilities: The role of positive reappraisal and social support. *Research in Developmental Disabilities* **65**, 12–22 (2017).
83. Laslo-Roth, R., George-Levi, S. & Margalit, M. Social participation and posttraumatic growth: The serial mediation of hope, social support, and reappraisal. *Journal of Community Psychology* (2020) doi:[10.1002/jcop.22490](https://doi.org/10.1002/jcop.22490).
84. Bryan, J. L., Young, C. M., Lucas, S. & Quist, M. C. Should i say thank you? Gratitude encourages cognitive reappraisal and buffers the negative impact of ambivalence over emotional expression on depression. *Personality and Individual Differences* **120**, 253–258 (2018).

85. Hanley, A. W. *et al.* Modeling the mindfulness-to-meaning theory's mindful reappraisal hypothesis: Replication with longitudinal data from a randomized controlled study. *Stress and Health* (2021) doi:[10.1002/smi.3035](https://doi.org/10.1002/smi.3035).
86. Garland, E. L., Kiken, L. G., Faurot, K., Palsson, O. & Gaylord, S. A. Upward spirals of mindfulness and reappraisal: Testing the mindfulness-to-meaning theory with autoregressive latent trajectory modeling. *Cognitive Therapy and Research* **41**, 381–392 (2016).
87. Zhou, X. & Wu, X. The mediating roles of acceptance and cognitive reappraisal in the relation between hope and posttraumatic growth among adolescents after the yaan earthquake. *Journal of Pacific Rim Psychology* **12**, e25 (2018).
88. McCracken, L. M., Badinlou, F., Buhrman, M. & Brocki, K. C. The role of psychological flexibility in the context of COVID-19: Associations with depression, anxiety, and insomnia. *Journal of Contextual Behavioral Science* **19**, 28–35 (2021).
89. Hernández-López, M., Cepeda-Benito, A., Díaz-Pavón, P. & Rodríguez-Valverde, M. Psychological inflexibility and mental health symptoms during the COVID-19 lockdown in Spain: A longitudinal study. *Journal of Contextual Behavioral Science* **19**, 42–49 (2021).
90. Rolffs, J. L., Rogge, R. D. & Wilson, K. G. Disentangling components of flexibility via the hexaflex model: Development and validation of the multidimensional psychological flexibility inventory (MPFI). *Assessment* **25**, 458–482 (2016).

91. Nitzan-Assayag, Y., Aderka, I. M. & Bernstein, A. Dispositional mindfulness in trauma recovery: Prospective relations and mediating mechanisms. *Journal of Anxiety Disorders* **36**, 25–32 (2015).
92. Krieger, T., Altenstein, D., Baettig, I., Doerig, N. & Holtforth, M. G. Self-compassion in depression: Associations with depressive symptoms, rumination, and avoidance in depressed outpatients. *Behavior Therapy* **44**, 501–513 (2013).
93. Landi, G., Pakenham, K. I., Boccolini, G., Grandi, S. & Tossani, E. Health anxiety and mental health outcome during COVID-19 lockdown in Italy: The mediating and moderating roles of psychological flexibility. *Frontiers in Psychology* **11**, (2020).
94. Kashdan, T. B. & Kane, J. Q. Post-traumatic distress and the presence of post-traumatic growth and meaning in life: Experiential avoidance as a moderator. *Personality and Individual Differences* **50**, 84–89 (2011).
95. Maxwell, S. E., Cole, D. A. & Mitchell, M. A. Bias in cross-sectional analyses of longitudinal mediation: Partial and complete mediation under an autoregressive model. *Multivariate Behavioral Research* **46**, 816–841 (2011).

7 Additional Information

7.1 Author contributions statement

NP, ER, MC, FT, and MD designed the study. NP collected and analysed the data. NP, ER, and MD interpreted the data to select the ideal growth mixture model. NP, ER, MC, FT, and MD interpreted the main results. NP wrote the first draft of manuscript. ER, MC, FT, and MD revised the manuscript. All authors approved the final version of the manuscript.

7.2 Competing interests

The author(s) declare no competing interests.

Table 1:

Sociodemographic characteristics of participants in each wave

Wave	1	2	3	4	5
Total <i>N</i>	1144	924	849	688	661
Gender					
Men	133 (11.6%)	110 (11.9%)	97 (11.4%)	76 (11%)	72 (10.9%)
Women	1011 (88.4%)	814 (88.1%)	752 (88.6%)	612 (89%)	589 (89.1%)
Age <i>M (SD)</i>					
18-25	83 (7.3%)	63 (6.8%)	53 (6.2%)	42 (6.1%)	42 (6.4%)
25-35	219 (19.1%)	178 (19.3%)	154 (18.1%)	123 (17.9%)	120 (18.2%)
35-45	370 (32.3%)	296 (32%)	275 (32.4%)	211 (30.7%)	195 (29.5%)
45-55	283 (24.7%)	233 (25.2%)	217 (25.6%)	183 (26.6%)	173 (26.2%)
55-65	148 (12.9%)	122 (13.2%)	117 (13.8%)	98 (14.2%)	99 (15%)
65-78	41 (3.6%)	32 (3.5%)	33 (3.9%)	31 (4.5%)	32 (4.8%)
Work					
Newly inactive	300 (26.2%)	250 (27.1%)	229 (27%)	191 (27.8%)	183 (27.7%)
Full teleworking	290 (25.3%)	237 (25.6%)	208 (24.5%)	159 (23.1%)	154 (23.3%)
Partial teleworking	100 (8.7%)	80 (8.7%)	84 (9.9%)	68 (9.9%)	59 (8.9%)
Working outside	163 (14.2%)	126 (13.6%)	114 (13.4%)	93 (13.5%)	86 (13%)
Inactive	291 (25.4%)	231 (25%)	214 (25.2%)	177 (25.7%)	179 (27.1%)

Note. Wave 1 corresponds to the initial measurement time; waves 2 to 5 are weekly follow-ups. Each participant responded to at least two waves (including wave 1).

Table 2:

Descriptive statistics and correlation matrix of the study variables as measured in wave 1

	<i>M</i>	<i>SD</i>	<i>VIF</i>	1	2	3	4	5	6	7	8	9	10	11
1. Depression	9.95	4.19		-										
2. Anxiety	17.44	3.94		.59	-									
3. Psychological flexibility (AAQ-II)	4.45	0.96	2.77	-.59	-.56	-								
4. Psychological inflexibility (AFQ)	1.81	0.72	2.39	.55	.50	-.74	-							
5. Gratitude-world (GQ-6)	5.02	0.99	1.88	-.27	-.39	.38	-.33	-						
6. Self-Transcendence (ASTI)	4.96	0.97	1.38	-.16	-.19	.18	-.15	.47	-					
7. Wisdom (3D-WS)	4.63	0.71	1.87	-.37	-.42	.56	-.57	.39	.29	-				
8. Optimism (CPC-12)	4.74	1.23	1.76	-.32	-.43	.41	-.31	.46	.25	.28	-			
9. Self-efficacy (CPC-12)	5.33	1.07	1.79	-.37	-.44	.49	-.40	.32	.25	.48	.43	-		
10. Hope (CPC-12)	5.01	1.03	2.06	-.40	-.51	.53	-.43	.44	.27	.43	.56	.57	-	
11. Gratitude-being (MW-BS)	5.24	1.03	1.68	-.21	-.38	.37	-.24	.54	.30	.25	.50	.27	.41	-
12. Peaceful disengagement (MW-BS)	5.20	0.96	1.39	-.45	-.46	.36	-.28	.31	.29	.18	.33	.39	.40	.34

Note. *M* = mean ; *SD* = standard deviation ; *VIF* = variance inflation factor. All correlations are significant at $p < .001$.

Table 3:

Fit indices and class distributions of the six best growth mixture models for depression

Rank	Random	N_C	AIC	BIC	SABIC	entropy	%C1	%C2	%C3	%C4	%C5	%C6	%C7
Depression													
1	I	6	20250.07	20376.12	20296.72	0.76	11.2	68.4	1.2	4.4	2.8	12.0	
2	I	4	20315.37	20401.09	20347.09	0.80	10.1	1.8	76.4	11.6			
3	I	7	20258.07	20404.29	20312.18	0.78	68.4	1.2	4.4	0.0	11.2	2.8	12.0
4	I	5	20300.42	20406.31	20339.61	0.79	3.6	9.8	1.7	76.6	8.3		
5	ISQ	7	20244.96	20416.40	20308.40	0.59	1.2	0.0	67.6	2.8	4.2	9.7	14.5
6	IS	4	20322.86	20418.66	20358.31	0.76	6.3	12.9	5.3	75.4			
Anxiety													
1	IS	3	21165.29	21240.93	21193.28	0.56	14.8	57.5	27.7				
2	IS	4	21150.59	21246.40	21186.05	0.63	3.1	9.1	31.7	56.1			
3	IS	5	21131.48	21247.46	21174.40	0.62	5.7	9.2	56.6	25.3	3.2		
4	I	6	21121.87	21247.93	21168.52	0.59	17.2	8.0	4.0	29.5	35.9	5.3	
5	I	5	21142.58	21248.47	21181.77	0.61	4.5	55.1	8.6	5.9	26.0		
6	IS	6	21121.84	21257.98	21172.22	0.65	3.1	54.0	26.7	5.2	2.1	8.7	

Note. The models are sorted by increasing BIC. The ‘Random’ column indicates the combination of random parameters in the model (‘I’ stands for intercept, ‘S’ for linear slope, and ‘Q’ for quadratic slope). The N_C column gives the number of classes estimated in the model.

Table 4:

Intercepts, linear and quadratic time parameters for each class of the selected growth mixture models

	Parameter	<i>b</i>	SE	Wald	<i>p</i>
Depression class					
D1	Intercept	12.81	0.45	28.74	0
	Linear time	-4.89	10.36	-0.47	0.64
	Quadratic time	-39.96	9.18	-4.35	0
D2	Intercept	11.03	0.66	16.62	0
	Linear time	185.91	17.27	10.76	0
	Quadratic time	5.02	17.98	0.28	0.78
D3	Intercept	5.69	0.13	44.89	0
	Linear time	-26.99	2.48	-10.9	0
	Quadratic time	2.3	2.38	0.97	0.33
D4	Intercept	10.86	0.32	34	0
	Linear time	-155.29	8.27	-18.78	0
	Quadratic time	13.01	7.26	1.79	0.07
Anxiety class					
A1	Intercept	9.23	0.33	28.05	0
	Linear time	46.76	13.57	3.45	0
	Quadratic time	-92.88	11.16	-8.32	0
A2	Intercept	5.3	0.19	28.06	0
	Linear time	-4.69	4.9	-0.96	0.34
	Quadratic time	-4.3	3.63	-1.18	0.24
A3	Intercept	11.5	0.25	45.36	0
	Linear time	-43.88	8.87	-4.95	0
	Quadratic time	-17.88	5.76	-3.1	0

Note. Time is coded in weeks.

Table 5:

Odd ratios of being in the depression symptomatology groups (Classes D1, D2, and D4)

depending on psychological resources (Step 1) and psychological flexibility (Step 2), controlling

for sociodemographic variables. Reference class: no depression symptomatology (D3).

Predictor	Z-O	Step 1	Step 2	Z-O	Step 1	Step 2	Z-O	Step 1	Step 2
Gratitude-world	0.71***	0.97	1.07	0.99	1.05	1.09	0.59***	1.06	1.18
Self-Transcendence	0.97	1.39*	1.19	1.16	1.27	1.19	0.67***	1.05	0.92
Wisdom	0.40***	0.43***	0.86	0.88	0.87	1.30	0.24***	0.35***	0.79
Optimism	0.68***	0.78*	0.83	0.69*	0.59*	0.60*	0.56***	0.80.	0.84
Self-efficacy	0.70***	1.19	1.32*	0.96	1.23	1.31	0.42***	0.85	0.96
Hope	0.59***	0.85	0.99	0.77	0.85	0.96	0.40***	0.68**	0.84
Gratitude-being	0.74***	1.06	1.29.	1.01	1.27	1.42	0.67***	1.21	1.35*
Peaceful	0.60***	0.66***	0.75*	0.97	0.94	1.03	0.39***	0.48***	0.53***
Psychological	0.23***		0.24***	0.53*		0.43*	0.17***		0.38***
Psychological	4.28***		1.19	1.80.		1.03	8.45***		2.68***
Age	0.97**	0.98*	0.98.	0.99	0.98	0.98	0.97***	0.98*	0.98.
Gender	2.00.	2.02.	1.67	0.63	0.54	0.41	2.32*	2.42*	1.86
Work-Newly inactive	1.17	1.01	1.01	1.22	1.25	1.21	1.07	0.89	0.92
Work-Partial	0.73	0.77	0.70	0.40	0.49	0.46	0.86	1.08	1.09
Work-Working outside	0.81	0.82	0.94	0.00	0.00***	0.00***	1.15	1.15	1.22
Work-Inactive	0.92	0.99	0.97	0.70	0.76	0.73	0.74	0.83	0.83
Environment quality	0.74**	0.83	0.91	0.96	1.07	1.12	0.78*	0.86	0.94
Relation quality	0.62***	0.69*	0.69*	1.23	1.31	1.32	0.71**	0.84	0.80
Solitude	0.83	0.61	0.56.	1.00	1.21	1.11	0.54*	0.40**	0.40**

Note. Values in Step 1 and 2 columns are the odds ratios from the multinomial regression models predicting adhesion to the depression classes against no depression symptomatology class as the reference group (Class D3). The Z-O column provides the variable zero-ordered effects, with other variables not included in the model. $p < .05$, $p < .01$, $p < .001$

Table 6:

Odds ratio of being in the anxiety symptomatology groups (Classes A1 and A3) depending on psychological resources (Step 1) and psychological flexibility (Step 2), controlling for sociodemographic variables. Reference class: no anxiety symptomatology (A2).

Predictor	Z-O	Step 1	Step 2	Z-O	Step 1	Step 2
Gratitude-world	0.92	1.15	1.18	0.43***	0.78*	0.82
Self-Transcendence	1.11	1.35**	1.30*	0.71***	1.45***	1.34**
Wisdom	0.58***	0.52***	0.70.	0.25***	0.37***	0.61**
Optimism	0.72***	0.78*	0.80*	0.45***	0.75**	0.80*
Self-efficacy	0.82*	1.19	1.22.	0.40***	0.86	0.88
Hope	0.67***	0.82	0.86	0.28***	0.61***	0.68**
Gratitude-being	0.80*	0.92	0.95	0.47***	0.85	0.87
Peaceful disengagement	0.73**	0.74**	0.79*	0.35***	0.46***	0.51***
Psychological flexibility	0.49***		0.67*	0.22***		0.64**
Psychological inflexibility	2.12***		1.24	5.37***		1.78**
Age	1.00	1.00	1.01	0.98**	0.99	1.00
Gender	3.31**	3.00**	2.57*	1.47.	1.41	1.11
Work-Newly inactive	0.85	0.82	0.81	1.13	0.82	0.80
Work-Partial teleworking	0.88	0.87	0.85	0.77	0.80	0.81
Work-Working outside	0.49*	0.51*	0.52*	0.73	0.54*	0.55*
Work-Inactive	0.72	0.71	0.69	1.01	0.89	0.86
Environment quality	0.83.	0.77*	0.78*	0.60***	0.66***	0.68***
Relation quality	0.87	0.91	0.91	0.55***	0.72**	0.71**
Solitude	0.77	0.62.	0.61.	1.17	0.72	0.71

Note. Values in Step 1 and 2 columns are the odds ratio from the logistic regression models predicting adherence to the anxiety classes with no anxiety symptomatology class as the reference group (Class A2). The column Z-0 depicts the zero-ordered effects of the variable, with other variables not included in the model. $p < .05$, $p < .01$, $p < .001$

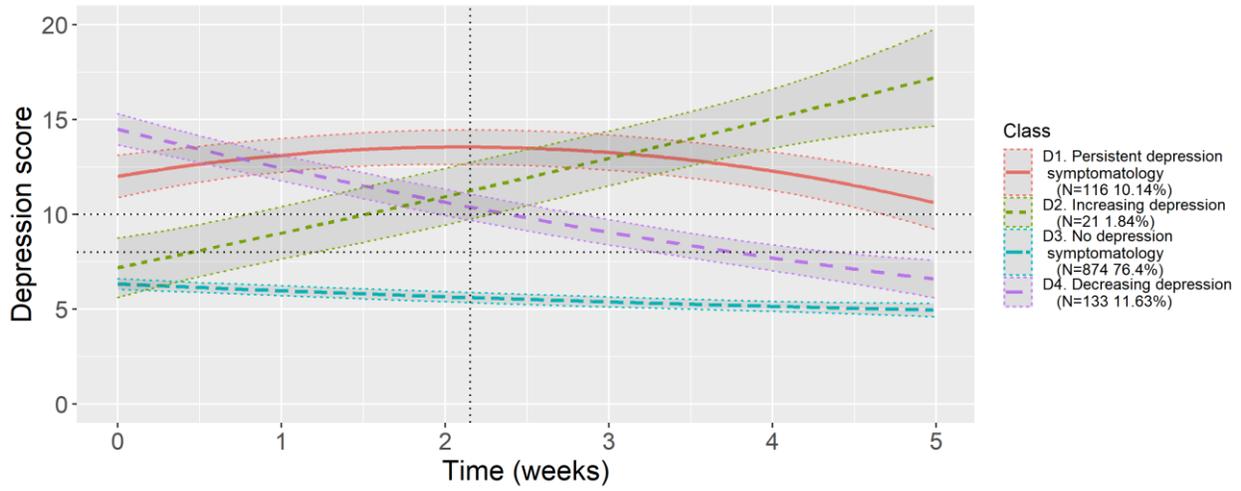


Figure 1. Predicted trajectories from selected growth mixture model of depression. Dashed horizontal lines represent symptomatic thresholds for depression (i.e., 8 and 10). The dashed vertical line depicts the moment unlockdown happened.

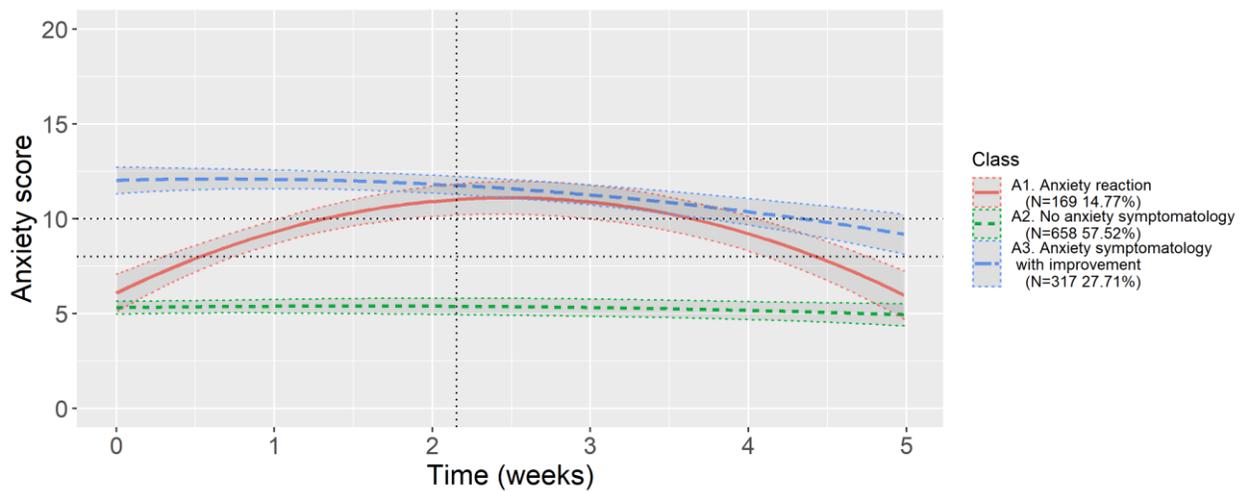


Figure 2. Predicted trajectories from the selected growth mixture model of anxiety. Dashed horizontal lines represent symptomatic thresholds for anxiety (i.e., 8 and 10). The dashed vertical line depicts the moment of unlockdown.