






## ORIGINAL ARTICLE

# Emotional distress among older adults during the COVID-19 outbreak: understanding the longitudinal psychological impact of the COVID-19 pandemic

Javier LÓPEZ <sup>1</sup>, Gema PEREZ-ROJO <sup>1</sup>, Cristina NORIEGA <sup>1</sup>, Jose Angel MARTINEZ-HUERTAS <sup>2</sup> and Cristina VELASCO <sup>1</sup>

<sup>1</sup>Department of Psychology, School of Medicine, Universidad San Pablo-CEU, CEU Universities and <sup>2</sup>Department of Basic Psychology, Universidad Autónoma de Madrid, Madrid, Spain

*Correspondence:* Dr Javier López, PhD, Departamento de Psicología, Facultad de Medicina, Universidad San Pablo-CEU, 28925 Alcorcón, Madrid, Spain. Email: jlopezm@ceu.es

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## INTRODUCTION

SARS-CoV-2 pandemic implies a greater risk of infection among older adults and people aged 60 or more accounted for 95% of deaths in Spain.<sup>1</sup> Through the COVID-19 pandemic period, older adults were restricted and they experienced a loss of freedom and separation from loved ones (i.e. friends and relatives). Older adults experienced social distancing and isolation. Thus, there is a risk of psychological burden on older adults.<sup>2</sup>

The current COVID-19 health crisis has alerted most countries, causing them to take restriction measures that help reduce the spread of this disease among

## Abstract

**Background:** Older adults have proven their ability to overcome adversities throughout their life. This study aims to assess the impact of the COVID-19 pandemic on older adults’ psychological distress (anxiety and depression) over time.

**Methods:** A community-dwelling Spaniard population ( $N = 192$ ) completed a survey and reported on their sociodemographic characteristics, appraisal and personal resources. Older adults took part in a longitudinal online survey collected in April 2020 (during the lockdown restrictions) and at two subsequent time points 3 and 9 months after baseline (without lockdown restrictions and during the third wave of the pandemic respectively).

**Results:** Older adults did not evidence higher emotional distress than during the initial lockdown. Furthermore, depression remained stable and anxiety significantly decreased. Results also suggest that some sociodemographic characteristics, appraisals and personal resources are relevant. Older participants showed less anxiety than younger ones. Furthermore, being a male, resilience, and acceptance were related with the decrease of anxiety. Otherwise, fear of the COVID-19 outbreak and depression were related with the increase of anxiety.

**Conclusion:** Older adults may adapt to the adverse pandemic impact by using more adaptive resources that reduce their distress. Efforts to ameliorate older adults’ anxiety by focusing on older adults’ personal resources should be considered.

the population. Nevertheless, lockdown stress is related to depression and anxiety.<sup>3</sup> The World Health Organization stresses that the COVID-19 pandemic has the potential to affect older adults’ emotional distress.<sup>4</sup> Evidence suggests that the COVID outbreak can exacerbate lasting psychological distress, including elevated levels of anxiety and depression.<sup>5</sup>

Older adults have faced high levels of life adversity through the pandemic.<sup>6</sup> Nevertheless, longitudinal studies of the COVID-19 impact focusing on older adults’ emotional distress have yielded mixed findings. For example, in a study conducted in the United Kingdom, depression and anxiety total scores did not significantly vary from April–May to July–

August 2020 for older adults. Nevertheless, over these 12 weeks, cases of depression increased significantly while anxiety cases decreased.<sup>7</sup> In another study, anxiety and depression levels of older adults receiving home care services did not experience significant changes during the first pandemic lockdown compared to the previous 2018 and 2019 years in Australia.<sup>8</sup> In contrast, in a study conducted in Chile,<sup>5</sup> found that depressive and anxiety symptoms had significantly increased in older adults from the pre-COVID 2019 period to the 2020 COVID peak period (from October to December 2020 and January to March 2021). Nevertheless, cases of depression increased significantly while anxiety cases remained stable over time. Some longitudinal studies in older adults showed they rated their distress during the COVID-19 pandemic just as equal as or even lower than they did before the COVID-19 pandemic. Some studies found no adverse effects on psychological distress during the pandemic's early stage.

The available longitudinal studies outlined above provide information mainly obtained in lockdown during the first wave, in two assessment points, providing a snapshot of the first few months since the start of the pandemic. There is a need for exploring potential correlates of emotional distress during the different restrictions provoked by the COVID-19 pandemic, considering health-related appraisals and personal resources variables.

The psychological consequences related to the varying restrictions imposed by governments to curb the spread of the virus during the pandemic are still relatively unknown. Continued follow-ups are needed to evaluate if the effects persist over time. To assess the true impact of the COVID-19 pandemic, longitudinal studies are needed to compare older adults' wellbeing throughout the pandemic.<sup>7</sup>

Nevertheless, it is necessary to point out that some cross-sectional studies suggest that older adults demonstrate resilience mechanisms that allow them to cope with this pandemic in a more positive way.<sup>9</sup> These results suggest that some sociodemographic and health-related variables have an impact on older adults' wellbeing. Thus, perceived health, family functioning, resilience, gratitude and acceptance had significant associations with psychological wellbeing.

Lazarus and Folkman developed a particularly helpful and extensively used stress process model that proposes a series of interrelated conditions.<sup>10</sup>

From this perspective, a primary stressor, an external demand, such as COVID-19, creates the conditions under which distress may occur. But the extent to which older adults experience emotional distress depends on their appraisal style and the resources they may have to assist in managing stressors. Some strategies, such as acceptance, positive reinterpretation or problem-focused coping can be adaptive in the face of sources of stress. A FRAG model had explained the relevance of older people's personal strengths during the first wave of the COVID-19 pandemic. FRAG model suggested that Family functioning, Resilience, Acceptance and Gratitude are important adjustment variables to cope with stressful situations like the COVID-19 pandemic.<sup>9</sup> Based on this model, the current study investigated longitudinally the emotional distress experienced by older adults during the COVID-19 crisis, and the variables associated with this.

## METHODS

We undertook a longitudinal study of community-dwelling older adults living in Spain during the COVID-19 pandemic. Participants were recruited using the snowball sampling technique, social media, and older adults organisations. The baseline (Time 1) took place in April 2020 (3 weeks following the start of the lockdown restrictions, when older adults were obliged to stay permanently at home and could only go outside for an essential reason, like food shopping, or pharmacy visits). Time 2 took place in July 2020 (a period without a lockdown, with few mandatory restrictions and a low rate of infections). Time 3 took place in January 2021 (during the third wave of COVID infection, which involved a high rate of infections, high rate of confirmed COVID-19 deaths and new restrictions with perimeter confinements, night-time curfew and public and private meetings limited to six people, with less than 0.5% of people vaccinated). Our eligible sample was defined as those who completed at least two measures during the COVID-19 longitudinal survey and all respondents had to participate in the first of the surveys. The study was approved by the University Ethics Committee (reference 436/20/26).

The sample was made up of 192 Spaniard community-dwelling older adults. Most participants were women (70%), living with their spouse or partner (57%) and reported a good (48%) perceived health. Moreover, 23 participants had

COVID-19 symptomatology; two had been hospitalised, 40 had a close family member or friend who had been hospitalised and 25 reported the loss of a loved one by the virus. Table 1 presents the sociodemographic information and descriptive analyses along with the three measurement occasions of the longitudinal study.

A Web-based survey was conducted to collect information about sociodemographic characteristics of older adults, self-perceived health, and features of the COVID-19 lockdown situation. The following standardised questionnaires were also Web-based administrated.

- The Family APGAR.<sup>11</sup> This five-items scale was used to measure family functioning (adaptability, partnership, growth, affection and resolve). Items were scored with a three-point Likert scale ranging from 0 (hardly ever) to 2 (usually). We used the Spanish version<sup>12</sup> which showed good reliability in our sample (Cronbach's  $\alpha_{T1} = 0.840$ ;  $\alpha_{T2} = 0.827$ ;  $\alpha_{T3} = 0.713$ ).
- Brief Resilient Coping Scale.<sup>13</sup> This four-item scale was used to measure resilience. It was assessed with a five-point Likert scale ranging from 1 (nothing) to 5 (a lot). The Spanish version<sup>14</sup> showed

adequate reliability in our sample (Cronbach's  $\alpha_{T1} = 0.742$ ;  $\alpha_{T2} = 0.772$ ;  $\alpha_{T3} = 0.876$ ).

- Gratitude subscale of the Values in Action Inventory of Strengths-Short Form.<sup>15</sup> This five-item scale was used to measure gratitude. It included five-point Likert scale response options ranging from 1 (very different from me) to 5 (very similar to me). The Spanish version<sup>16</sup> showed good reliability in our sample (Cronbach's  $\alpha_{T1} = 0.868$ ;  $\alpha_{T2} = 0.900$ ;  $\alpha_{T3} = 0.924$ ).
- The Acceptance and Action Questionnaire - II (AAQ-II).<sup>17</sup> This seven-items instrument was used to measure experiential avoidance and psychological inflexibility. It included seven-point Likert scale response options ranging from 1 (not at all true) to 7 (completely true). The Spanish version<sup>18</sup> showed good reliability in our sample (Cronbach's  $\alpha_{T1} = 0.899$ ;  $\alpha_{T2} = 0.896$ ;  $\alpha_{T3} = 0.899$ ).
- Hospital Anxiety and Depression Scale.<sup>19</sup> This 14-item scale is composed of two different subscales that measure anxiety and depression composed of seven items each, with four response options. They were used to measure emotional distress. The Spanish version<sup>20</sup>

**Table 1** Descriptive analysis along the three measurement occasions of the longitudinal study

	T1-T3		
Gender, male, %	30.3%		
Age, mean (SD)	68.22 (5.85)		
Marital status, %			
Single	14.6%		
Married	56.7%		
Divorced	11.5%		
Widower or widow	17.2%		
	T1	T2	T3
Perceived health, %			
Poor	4.9%	4.8%	5.6%
Fair	23.1%	17.8%	14.3%
Good	47.8%	53.1%	60.3%
Very good	24.2%	24.3%	19.8%
COVID-19 consequences, %			
Having COVID-19-like symptoms	12%	6.6%	11.9
Hospitalised due to COVID-19	1.2%	3.6%	1.6%
Loved one hospitalised due to COVID-19	23.1%	31.7%	26.2%
Loved one passed away due to COVID-19	14.3%	23.4%	21.4%
Anxiety, mean (SD)	11.9 (3.5)	11.5 (3.1)	11.2 (2.9)
Depression, mean (SD)	10.5 (3.1)	10.3 (3.1)	10.2 (3.1)
Avoidance, mean (SD)	19.5 (7.1)	19.5 (7.0)	18.1 (6.7)
Family functioning, mean (SD)	13.8 (1.9)	13.8 (1.7)	13.9 (1.4)
Resilience, mean (SD)	16.2 (2.9)	15.4 (3.0)	15.9 (3.5)
Gratitude, mean (SD)	7.7 (2.9)	7.6 (3.1)	7.6 (3.1)
Fear to COVID-19 outbreak, mean (SD)	1.4 (0.8)	1.5 (0.8)	1.5 (0.8)

T1-T3 = measurement occasion. N = 192 (T1), 167 (T2), 126 (T3).

showed good reliability for anxiety (Cronbach's  $\alpha_{T1} = 0.853$ ;  $\alpha_{T2} = 0.794$ ;  $\alpha_{T3} = 0.796$ ) and depression (Cronbach's  $\alpha_{T1} = 0.802$ ;  $\alpha_{T2} = 0.781$ ;  $\alpha_{T3} = 0.822$ ).

Different latent growth curve models were used to estimate the linear longitudinal trajectories of the dependent variables, namely: anxiety and depression. When the dependent variable presented a statistically significant growth among the study, a full model with time-invariant and time-varying predictors were fitted to analyse the correlates of change. All these models were fitted with lavaan package in R software using maximum likelihood estimator and full information maximum likelihood to deal with missing data.<sup>21</sup>

## RESULTS

### Linear longitudinal trajectories

The latent growth curve model showed a good fit to the data for anxiety ( $\chi^2(3) = 3.137$ ,  $P = 0.371$ , comparative fit index (CFI) = 0.999, Tucker-Lewis index (TLI) = 0.999, root mean square error of approximation (RMSEA) = 0.015 (0.001–0.124), standard root mean squared residual (SRMR) = 0.043) and depression ( $\chi^2(2) = 1.270$ ,  $P = 0.530$ , CFI = 1.00, TLI = 1.00, RMSEA = 0.001 (0.001–0.125), SRMR = 0.028). Anxiety presented a not statistically significant intercept due to variables and was standardised based on the

first time-point ( $b = -0.016$ ,  $SE = 0.066$ ,  $z = -0.241$ ,  $P = 0.810$ ) and a statistically significant reduction over time ( $b = -0.091$ ,  $SE = 0.027$ ,  $z = -3.324$ ,  $P = 0.001$ ). The variance of the intercepts was statistically significant ( $\sigma^2 = 0.531$ ,  $SE = 0.063$ ,  $z = 8.418$ ,  $P < 0.001$ ), while the variance of the slopes and the covariance between the intercept and the slope were fixed to zero. These results mean there is a general longitudinal linear decrease of anxiety and that individuals present differences in their initial status but they have a similar longitudinal growth.

Depression presented a not statistically significant intercept due to variables and was standardised based on the first time-point ( $b = 0.008$ ,  $SE = 0.070$ ,  $z = 0.118$ ,  $P = 0.906$ ) and a not statistically significant reduction over time ( $b = -0.043$ ,  $SE = 0.029$ ,  $z = -1.500$ ,  $P = 0.134$ ). The variance of the intercepts was statistically significant ( $\sigma^2 = 0.604$ ,  $SE = 0.105$ ,  $z = 5.723$ ,  $P < 0.001$ ), while the variance of the slopes was fixed to zero. These results mean that we found different initial levels of depression at the first time-point but no linear longitudinal growth.

### Longitudinal trajectories with time-invariant and time-varying predictors

Given that only anxiety showed a statistically significant longitudinal growth along the study, a full latent growth

**Table 2** Results from latent growth curve model with predictors for anxiety

	Anxiety		
	Estimate	SE	z-value
Intercepts and slopes			
Intercept, mean	-0.019	0.044	-0.436
Slope, mean	-0.074	0.026	-2.908**
Intercept, variance	0.112	0.021	5.209**
Slope, variance	0.001	-	-
Intercept and slope covariance	0.001	-	-
Path estimates	Estimate	SE	z-value
Time-invariant predictors			
Gender, ref: women → Intercept	-0.184	0.134	-1.375
Gender, ref: women → Slope	-4.019	1.383	-2.906**
Age, years → Intercept	-0.621	0.297	-2.090*
Age, years → Slope	0.159	1.013	0.157
Time-varying predictors			
Depression	0.407	0.040	10.129**
Avoidance	0.193	0.041	4.724**
Family functioning	-0.032	0.030	-1.075
Gratitude	-0.069	0.035	-1.994*
Resilience	-0.080	0.032	-2.479*
Fear of COVID outbreak	0.183	0.029	6.410**

$N = 192$ . \*\* =  $P < 0.01$ . \* =  $P < 0.05$ . Maximum likelihood and full information maximum likelihood estimations. Given that the continuous predictors were standardised, their estimations can be understood as standardised estimates. Time-varying predictor parameters were fixed to be equal across measurement moments.

curve model with time-invariant and time-varying predictors was fitted for it. This model showed less fit to the data compared to the baseline model but adequate model residuals ( $\chi^2(109) = 296.932$ ,  $P < 0.001$ , CFI = 0.733, TLI = 0.755, RMSEA = 0.088 (0.079–0.097), SRMR = 0.067). Table 2 presents the estimates of this latent growth curve model.

Regarding the time-invariant predictors, age showed a significant negative relation with its intercept, that is, older participants showed less anxiety than younger ones. Also, gender showed a significant negative relation with the slope of anxiety, where men tend to present more decrease of anxiety along the study than women. Regarding the time-varying predictors, different covariance between the change of anxiety and the change of the predictors were found. A positive covariance was found with avoidance and fear of COVID-19 outbreak, and especially with depression. A negative covariance was found with gratitude and resilience.

## DISCUSSION

This study investigated the longitudinal effects of the COVID-19 pandemic on emotional distress in a Spanish sample of older adults. Our first aim was to determine the levels of anxiety and depression throughout the COVID-19 pandemic. Contrary to expectation, older adults improved their emotional distress. Specifically, they maintained their depressive levels and decreased their anxiety levels across the pandemic despite governmental restrictions.<sup>4</sup> Our results could indicate a more challenging psychological experience in the strict lockdown or a higher initial reactivity to the COVID-19 pandemic among participants. Notwithstanding changes in routines, activities and less direct contact with people they supported, older adults seem to have adapted to the pandemic situation. By contrast, a recent study points out there was a significant increase in the recognition of negative emotions such as sadness during the confinement situation in young people.<sup>22</sup>

Some previous studies observed that older adults' anxiety and depression total scores did not vary significantly following the onset of the pandemic.<sup>7,8</sup> In line with our study, age was negatively related to the levels of psychological distress over time in our participants. Recent evidence from Spain showed how older adults presented lower psychological distress

(lower anxiety, depression, and stress) as a result of the pandemic than people aged below 60.<sup>2</sup> Furthermore, in a transnational study, age was negatively related to emotional distress.<sup>3</sup> Consistent with these data from the early pandemic period, emotional distress declined with age. An emotional age-related advantage was observed in the COVID-19 pandemic. Moreover, female participants who experienced higher depression, avoidance, and fear of COVID outbreak, and lower gratitude and resilience levels, reported higher anxiety. Our findings suggest that gender-related advantages that were observed during the most restrictive, earlier period of lockdown are not attenuated through the pandemic.<sup>2,3</sup> These effects persist over time. Male older adults experienced not only lower anxiety in the early strict lockdown period than females, but also lower anxiety levels from the beginning of the pandemic to the second wave in Spain. Nevertheless, future research is needed to clarify if and how gender mediates the increase of anxiety.

Avoidant behaviours (i.e. trying not to think about the event, remove it from memory, not talking about it) are higher among female older adults than among male older adults, and women experience higher anxiety than men.<sup>2</sup> For this reason, it is not surprising that higher experiential avoidance (i.e. the phenomenon that occurs when a person is unwilling to remain in contact with particular private bodily sensations, emotions, thoughts, memories, images, and behavioural predispositions) was related in our study with higher anxiety.

There was a positive relationship between fear of COVID-19 and anxiety. In line with other studies, anxiety is connected with worrying about the adverse effects of COVID-19.<sup>23</sup> Anxiety was related to COVID-19 personal concern, and perceived seriousness.<sup>3</sup> Those with a greater sense of fear of COVID may be worse prepared to respond to emotional challenges more quickly and efficiently. Fear of the pandemic increased the unknown and uncertainty about the future. It also decreased control in facing the current situation. Older adults more concerned about the effects of coronavirus on their life experienced more anxiety.

A significant negative relationship between resilience and anxiety was found. A previous study about COVID-19 impact on Spanish older adults suggested that older participants have greater resilience as, in general, they have coped with more stressful events than younger ones (i.e. older adults were children and adolescents during the post-Civil War period). This may have

contributed to their resilience and, consequently, may now be ameliorating the emotional impact of the pandemic.<sup>2</sup> The COVID-19 pandemic is a stressful event that challenges subjects' resilience and anxiety.

In line with other studies, gratitude is negatively related to anxiety because older adults had an increased appreciation of positive qualities, situations, and people in their lives.<sup>24</sup> A life orientation toward noticing and appreciating the positive aspects in one's life and the world predicted a lower risk of anxious symptomatology. Thus, older adults with higher gratitude experienced less anxious symptoms mainly because they were able to encourage and be compassionate and reassuring toward themselves when things were wrong.

Older adults' depression across the pandemic is positively related to anxiety. These two emotional distress characteristics are connected. In line with previous COVID-19 lockdown research, there was a longitudinal association between depressive and anxiety symptoms.<sup>5</sup>

There are some limitations to be acknowledged. First, our study is limited by its small sample size and may not represent the geographic, cultural and socio-economic variety of Spaniard older adults. Nevertheless, its longitudinal design enables comparison of changes in older adults' emotional distress throughout the COVID-19 pandemic using instruments with good psychometric properties. Second, our study did not include pre-pandemic levels of emotional distress, which would have provided additional insight into changes in anxiety and depression. Nevertheless, due to the unforeseen circumstance of the pandemic, it was not possible to collect these previous data. Our survey provides a general overview of anxiety and depression variations since the nationwide lockdown. Third, these findings are limited to community-dwelling older adults, who were able and willing to complete an online survey. Consequently, the results likely underestimate the impact of long-term facilities on Spaniard older adults' emotional distress. Further research is needed to assess anxiety and depression in older adults living in nursing homes.

Despite these limitations, our results do not show evidence that older adults have a preserved emotional wellbeing. The results also suggest that the spread of the pandemic may not be as important for older adults' distress than their appraisals and personal resources for managing COVID-related problems.

Understanding the patterns of emotional distress (anxiety and depression) across the COVID-19 pandemic could help mental health professionals, services and governments to plan for future waves of the virus. Hence, more research on emotional distress indicators is needed to monitor and counteract the consequences of this pandemic.

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## ETHICS APPROVAL

The study was approved by the Ethics Review Panel of the Universidad San Pablo-CEU (Ref.: 436/20/26). All procedures performed in this study involving human participants were in accordance with the 1975 Helsinki Declaration.

## DATA SHARING AND DATA ACCESSIBILITY

All data and materials can be obtained from the corresponding author upon request.

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