

# The Moderating Effect of Older Adults' Receptive Arts Engagement on the Association Between Resilience and Anxiety Symptoms During Coronavirus Breakout

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**Abstract:** In this study, we evaluated whether levels of receptive arts engagement (visiting museums/concerts/theater/the cinema) during the year preceding the COVID-19 outbreak may have served as a psychological resource for older adults that mitigated the association between resilience levels and COVID-19 anxiety when the pandemic broke out. Data were collected after the enactment of the first emergency regulations (between March 15 and April 1, 2020) via the Qualtrics Survey Software link that was sent out through social media platforms. In total, 205 participants aged 65 to 92 (mean age, 72.32; SD, 5.63) reported general anxiety symptom levels (GAD-7) (Spitzer et al., 2006), resilience (Connor-Davidson Resilience Scale), frequency of receptive arts engagement in the previous year, health status, exposure to risk situations, and behavioral changes due to the pandemic. Our hypothesis that receptive arts would moderate the resilience–COVID-19 anxiety link was examined by a multiple hierarchical regression analysis and with the PROCESS computational tool. Findings show that resilience was associated with COVID-19 anxiety and that this association was moderated by levels of receptive arts engagement. The findings show that high levels of prior art engagement constituted a potent buffer against subsequent COVID-19 anxiety. Policy makers may benefit older adults by encouraging their engagement in arts activities, even during social distancing.

**Key Words:** Arts, cultural engagement, COVID-19, older adults, anxiety, resilience

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Over the past two decades, there has been a major research increase in studying the positive effects of arts on older adults' health and well-being (Clift and Camic, 2016; Fraser et al., 2015; Hanna et al., 2015). Receptive arts engagement is defined as the attendance of arts-based events and venues such as museums, art exhibitions and galleries, concerts, the theater, and the cinema (Tymoszuk et al., 2020). The literature indicates that receptive arts engagement has psychological, social, and behavioral benefits (Fancourt and Finn, 2019). These advantages particularly apply to older adults, where receptive arts and cultural engagement was found to support cognitive reserve (Fancourt et al., 2018), enhance emotion regulation, and help protect against depression (Fancourt and Tymoszuk, 2019). In addition, receptive arts engagement stimulates social interactions and reduces social isolation (Camic et al., 2014; Tymoszuk et al., 2019). Moreover, long-term frequent receptive arts engagement was associated with higher levels of happiness, life satisfaction, self-realization, and autonomy in older adults (Tymoszuk et al., 2020). In this sense, receptive arts engagement might be considered a coping resource in time of crisis.

On March 11, 2020, when the World Health Organization officially declared coronavirus disease (COVID-19) to be a pandemic, the Israeli

government decided to prohibit gatherings of more than 100 people. Accordingly, all cultural and arts events were canceled (Gesser-Edelsburg et al., 2020; Klingbail, 2020; The Association of Museums and ICOM Israel, 2020). In addition, other emergency regulations were enacted, including imposition of a curfew, which allowed individuals to leave the confines of their house only for critical reasons (Gesser-Edelsburg et al., 2020). The COVID-19 pandemic presented a serious threat to older adults' physical health and life. The precautions taken by governments of social isolation have likely saved lives but have also given rise to loneliness, as well as increasing other psychiatric symptoms, such as anxiety and depression, even in persons not directly exposed to COVID-19 (Armitage and Nellums, 2020; Gerst-Emerson and Jayawardhana, 2015; Palgi et al., 2020). Thus, persons in social isolation may experience anxiety of contracting COVID-19, getting sick, or dying (Ho Su Hui et al., 2020; Qiu et al., 2020; Yang et al., 2020).

An interesting question is whether this COVID-19 form of anxiety is linked with resilience. Resilience is defined as “the process of adapting well in the face of adversity, trauma, tragedy, threats, or significant sources of stress” (American Psychological Association, 2020). Older adults may develop resilience due to their psychological resources (Connor and Davidson, 2003) that help them adapt and face crises like COVID-19. In this way, their past experience, wisdom, and reserves may help them thrive even in the face of adversity, thereby mitigating their anxiety levels (MacLeod et al., 2016; Smith and Hollinger-Smith, 2015). Referring directly to the COVID-19 crisis, it is assumed that those with higher level of resilience will have more effective coping abilities and will better adapt to social distancing and COVID-19 anxiety. As mentioned, receptive arts engagement was found to be associated with various psychological resources in old age (e.g., Camic et al., 2014; Fancourt et al., 2018, Tymoszuk et al., 2020) and with lower risk for developing mental health problems (e.g., Fancourt and Tymoszuk, 2019; Tymoszuk et al., 2019). Thus, receptive arts engagement should likely be associated with high level of resilience and may moderate the association between COVID-19 resilience and anxiety. In other words, the association between resilience and COVID-19 will be weaker under high receptive arts levels; the detrimental impact of having low resilience, which should typically be associated with high COVID-19 anxiety, will be mitigated under high levels of receptive arts.

In summary, the current study comprises a preliminary examination that evaluates resilience levels and anxiety symptoms vis-à-vis the pandemic among older adults in Israel. The second and more critical aim, as mentioned, was to assess whether the levels of receptive arts engagements in the preceding year mitigated the association between COVID-19 resilience and anxiety. We hypothesized that COVID-19 anxiety would be highest under the combination of low resilience and low art engagement, as neither resource can buffer against the effects of COVID-19 anxiety.

## METHODS

### Setting

The study was conducted immediately after COVID-19 breakout in Israel when all of the art/cultural centers in Israel were already closed

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for 2 to 3 weeks (Gesser-Edelsburg et al., 2020). On the last day of data collection, the total number of Israelis who tested positive for COVID-19 was 6902, 241 had fully recovered, and 24 had died.

## Design

Data were collected through an online survey between March 15 and April 1, 2020. All participants were informed about the subject of the research and provided their electronic consent to participate. After informed consent, participants completed the study questionnaire. Ethical approval was received from the institutional review board at the second author's university.

## Participants

Data were obtained from 205 Israeli participants with an average age of 72.32 (SD, 5.63; range, 65–92). Most of them were women ( $n = 138$ , 67.3%), married, or cohabitating ( $n = 150$ , 73.2%), and most of them reported they had tertiary education ( $n = 177$ , 86.4%).

## Measures

### Sociodemographic Variables and Covariates

Participants were asked to report their age, sex, marital status, economic status (using a scale that ranged from 1 to 5), and education. In addition, participants reported whether they were exposed to six COVID-19 pandemic-related risk situations (e.g., self-isolation, knowing someone in isolation; yes answers were computed into a continuous variable with a scale ranging from 0 to 6; for the full questionnaire, see Appendix 1) (Palgi et al., 2020), change in 11 pandemic-related behaviors (e.g., washing hands more often; yes answers were computed into a continuous variable with a scale ranging from 0 to 11; for the full questionnaire, see Appendix 2) (Shrira et al., 2020), and self-rated health (using a scale that ranged from 1 to 5) (Benyamini and Idler, 1999). Moreover, participants were asked to report whether they had chronic medical conditions related to increased risk of death due to COVID-19 complications (yes/no) (i.e., cardiovascular disease, diabetes, chronic respiratory disease, hypertension, and cancer), which have been associated with increased medical complication outcomes of COVID-19 (Rothan and Byrareddy, 2020).

### Frequency of Receptive Arts Engagement

Participants were asked to rate the frequency they attended cultural and arts-based events during the preceding year (including visiting the theater, concerts, dance performance, art galleries, museums, and the cinema) on a single-item scale ranging from 1 (not at all) to 6 (at least once a week).

### COVID-19 Resilience

COVID-19 resilience was measured by the Connor-Davidson Resilience Scale ( $\alpha = 0.0.83$ ), which comprises 10 items that aim to examine level of resilience (Campbell-Sills and Stein, 2007). Participants were asked to report how the coronavirus outbreak affected their resilience on a scale ranging from 1 (not true at all) to 5 (true nearly all of the time).

### COVID-19 Anxiety Symptoms

Anxiety symptoms in the last 2 weeks were measured by the GAD-7, which comprises seven items that aim to examine level of anxiety symptoms (Spitzer et al., 2006) ( $\alpha = 0.902$ ) on a scale ranging from 0 (not at all) to 4 (almost every day).

## Data Collection

Questionnaires disseminated via the web-based public platform Qualtrics were sent out via social media platforms like Facebook or

WhatsApp. Data were collected for 2 weeks using a snowball sampling technique.

## Data Analysis

At the first stage, Pearson's correlations were examined to establish the preliminary links between the study variables (see Table 1 for means, standard deviations, and correlation for the study variables). Subsequently, to examine our hypotheses, we conducted a multiple hierarchical linear regression analysis. Demographic variables (age, sex, type of education, marital status, and economic situation) and covariates (self-rated health, diagnosis of chronic medical conditions related to increased risk of death due to COVID-19 complications, level of exposure to COVID-19-related risk situations, and change in behaviors due to the pandemic) were entered in step 1. Frequency of receptive arts engagement and resilience were entered in step 2. In the third step, the interaction between frequency of receptive arts engagement and resilience was entered. All predictors were mean centered before moderation analysis. Significant interactions were examined with the PROCESS computational tool (Hayes, 2013). Using this tool enables probing the significance of slopes at different levels of the moderator (i.e., receptive art).

## RESULTS

As mentioned, most of the participants were women (for more details, see Table 1).

Women were significantly younger than men (mean, 73.48; SD, 6.62) and showed higher level of anxiety (mean, 3.25; SD, 4.14), self-rated health (mean, 3.78; SD, 0.88), and less diagnosis of chronic medical conditions (58.1%). For more details see Table 2.

Resilience was negatively correlated with anxiety symptom levels ( $r = -0.38$ ,  $p < 0.001$ ). For more details, see Figure 1. Frequency of receptive arts engagement was positively correlated with level of resilience ( $r = 0.28$ ,  $p < 0.001$ ) and was negatively correlated with level of anxiety symptoms regarding the pandemic breakout ( $r = -0.24$ ,  $p < 0.001$ ). Correlations between the main variables were low to moderate according to Cohen (2013). For further information, see Table 2.

The hierarchical regression analysis revealed that lower resilience was related to higher level of anxiety symptoms ( $\beta = -0.33$ ,  $t = -4.58$ ,  $p < 0.001$ ). In addition, individuals who reported a lower frequency of receptive arts engagement also reported higher level of anxiety symptoms ( $\beta = -0.15$ ,  $t = -2.11$ ,  $p < 0.05$ ).

The combination between resilience and frequency of receptive arts engagement was entered in the third step and revealed a significant interaction ( $\beta = 0.18$ ,  $t = 2.64$ ,  $p < 0.01$ ), accounting for an additional 3% of the variance in anxiety symptoms. To probe the interaction source, we applied Hayes' (2013) process plugin (model 1), a computational procedure that estimates effects of this link at receptive arts engagement values of  $\pm 1$  SD from the mean.

In individuals reporting high receptive arts engagement (+1 SD), each additional resilience score was associated with a nonsignificant decrease of 0.94 point in level of anxiety symptoms ( $B = -0.94$ ,  $t = -1.51$ ,  $p = 0.13$ ), that is, the resilience-anxiety slope was insignificant. However, for individuals with low receptive arts engagement levels (-1 SD), each additional increase in resilience was associated with a significant decrease of 3.02 points on the anxiety symptoms scale ( $B = -3.02$ ,  $t = -5.28$ ,  $p < 0.001$ ) (Fig. 2, Table 3).

## DISCUSSION

The current study examined the moderating effect of receptive arts engagement on the resilience-COVID-19 anxiety link during the first weeks of the pandemic. The data revealed that participants who had higher levels of receptive art engagement during the preceding year, or alternatively had higher resilience levels, reported lower COVID-19 anxiety levels. Only those who had both low resilience coupled with low engagement in receptive arts showed very high anxiety levels.

**TABLE 1.** Demographics and Correlations Table for the Study Variables

	Mean, %	SD	1	2	3	4	5	6	7	8	9	10	11
1. GAD	2.85	3.99	—										
2. Resilience	3.88	0.63	-0.38***	—									
3. ArtE	4.6	1.18	-0.24***	0.28***	—								
4. Age	72.32	5.63	-0.04	-0.06	-0.08	—							
5. Sex <sup>a</sup>	67.3	—	0.14*	-0.12	0.10	-0.14*	—						
6. Marital status <sup>b</sup>	73.2	—	0.03	-0.02	-0.08	-0.08	-0.23**	—					
7. Education <sup>c</sup>	69.3	—	-0.09	-0.05	0.09	-0.04	-0.01	0.10	—				
8. Self-rated health <sup>d</sup>	3.60	0.93	-0.07	0.07	0.12	-0.14*	0.28***	-0.08	0.14*	—			
9. Economic situation <sup>e</sup>	3.68	0.87	-0.15*	0.06	0.13	-0.05	0.03	0.21**	0.24***	0.41***	—		
10. Chronical medical condition <sup>f</sup>	48.8	—	0.33	-0.08	0.11	-0.16*	0.22***	0.07	0.02	0.49***	0.17*	—	
11. Exposure to COVID-19–related situations <sup>g</sup>	1.15	1.08	0.05	0.02	0.02	-0.07	0.02	-0.02	0.07	0.11	0.02	-0.01	—
12. Behavioral change <sup>h</sup>	8.23	2.36	-0.07	0.11	0.10	-0.12	-0.08	0.07	0.11	-0.04	0.08	-0.04	0.13

Total N = 196.

ArtE indicates frequency of attending arts-based events; GAD, general anxiety disorder; Resilience, the Connor-Davidson Resilience Scale.

<sup>a</sup>Gender = woman.

<sup>b</sup>Marital status = currently married, or living with a partner.

<sup>c</sup>Education = tertiary education.

<sup>d</sup>Higher score (range, 1–5) means better health.

<sup>e</sup>The score ranged from 1 to 5. Higher score (range, 1–5) means better economic situation.

<sup>f</sup>Without diagnosis of chronic medical conditions.

<sup>g</sup>Higher score (range, 1–6) means greater exposure to COVID-19–related risk situations.

<sup>h</sup>Higher score (range, 1–11) means greater changes in behavior due to the pandemic.

\**p* < 0.05.

\*\**p* < 0.01.

\*\*\**p* < 0.001.

**TABLE 2.** Sex Differences for the Study Variables

	Mean, %	SD	Mean, %	SD	Difference Test
	Male	Male	Female	Female	
1. GAD	2.03	3.56	3.25	4.14	<i>t</i> (203) = -2.06, <i>p</i> < 0.05
2. Resilience	3.99	0.62	3.83	0.63	<i>t</i> (203) = 1.72, <i>p</i> = 0.87
3. ArtE	4.44	1.24	4.68	1.15	<i>t</i> (197) = -1.38, <i>p</i> = 0.17
4. Age	73.48	6.62	71.75	5.00	<i>t</i> (203) = 2.08, <i>p</i> < 0.05
5. Marital status <sup>a</sup>	88.1	—	65.9		$\chi^2 = (1,205) = 11.24, p < 0.001$
6. Education <sup>b</sup>	70.1	—	69.3		$\chi^2 = (1,204) = 0.14, p = 0.90$
7. Self-rated health <sup>c</sup>	3.22	0.94	3.78	0.88	<i>t</i> (202) = -4.16, <i>p</i> < 0.001
8. Economic situation <sup>d</sup>	3.64	0.83	3.69	0.90	<i>t</i> (202) = -0.40, <i>p</i> = 0.69
9. Chronical medical condition <sup>e</sup>	34.4	—	58.1		$\chi^2 = (1,197) = 9.43, p < 0.01$
10. Exposure to COVID-19–related situations <sup>f</sup>	1.12	1.11	1.16	1.076	<i>t</i> (203) = -0.25, <i>p</i> = 0.25
11. Behavioral change <sup>g</sup>	8.51	2.07	8.10	2.48	<i>t</i> (203) = 1.15, <i>p</i> = 0.81

ArtE indicates frequency of attending arts-based events; GAD, general anxiety disorder; Resilience, the Connor-Davidson Resilience Scale.

<sup>a</sup>Marital status = currently married or living with a partner.

<sup>b</sup>Education = tertiary education.

<sup>c</sup>Higher score (range, 1–5) means better health.

<sup>d</sup>The score ranged from 1 to 5. Higher score (range, 1–5) means better economic situation.

<sup>e</sup>Without diagnosis of chronic medical conditions.

<sup>f</sup>Higher score (range, 1–6) means greater exposure to COVID-19–related risk situations.

<sup>g</sup>Higher score (range, 1–11) means greater changes in behavior due to the pandemic.

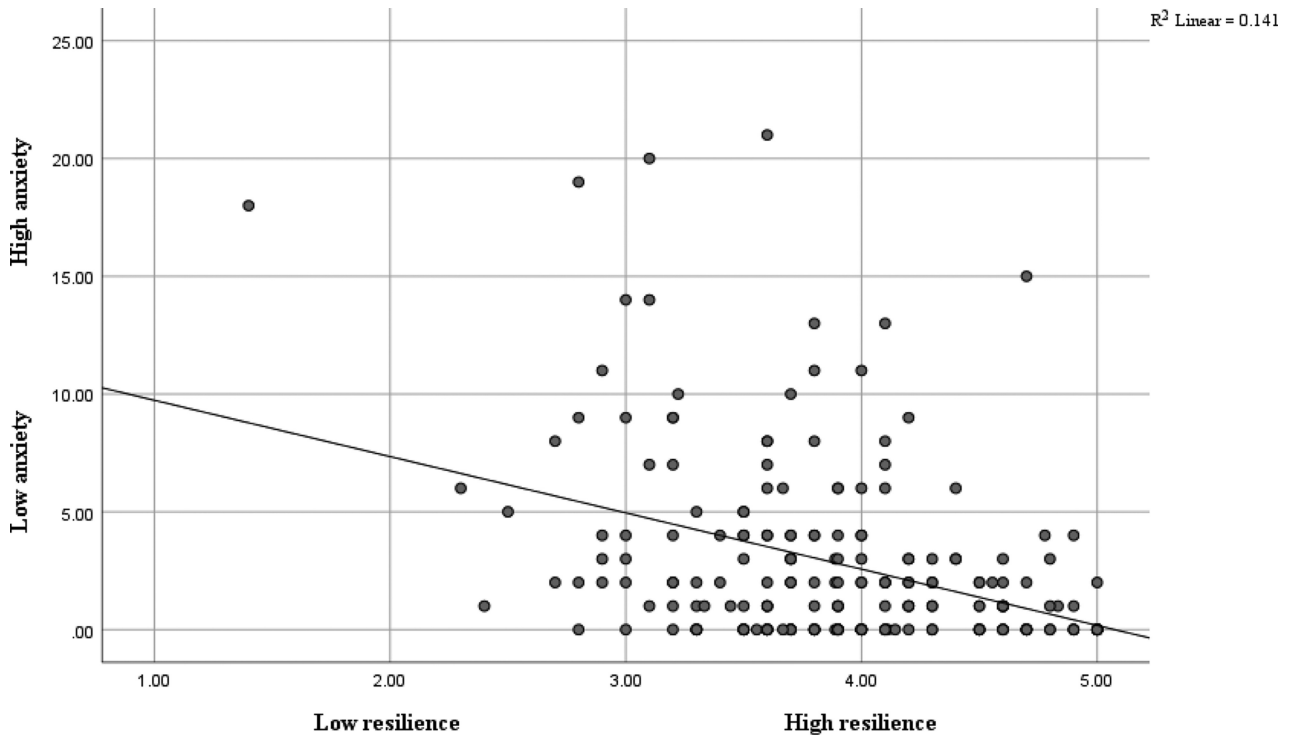


FIGURE 1. The association between resilience and general anxiety symptoms.

Furthermore, high-frequency receptive arts engagement buffered against anxiety, even for those with low resilience.

This finding supports previous findings showing that cultural and arts engagement seems to be a coping resource and a risk-reducing factor for the development of mental health problems among older adults

(Fancourt and Tymozzuk, 2019; Rogers and Fancourt, 2020; Tymozzuk et al., 2019). Previous studies also found health-related benefits of cultural and arts engagement, such as enhancing mood, positive experience, emotional expression, and sense of meaning in life (Fancourt and Finn, 2019). The current study extends these previous findings by indicating

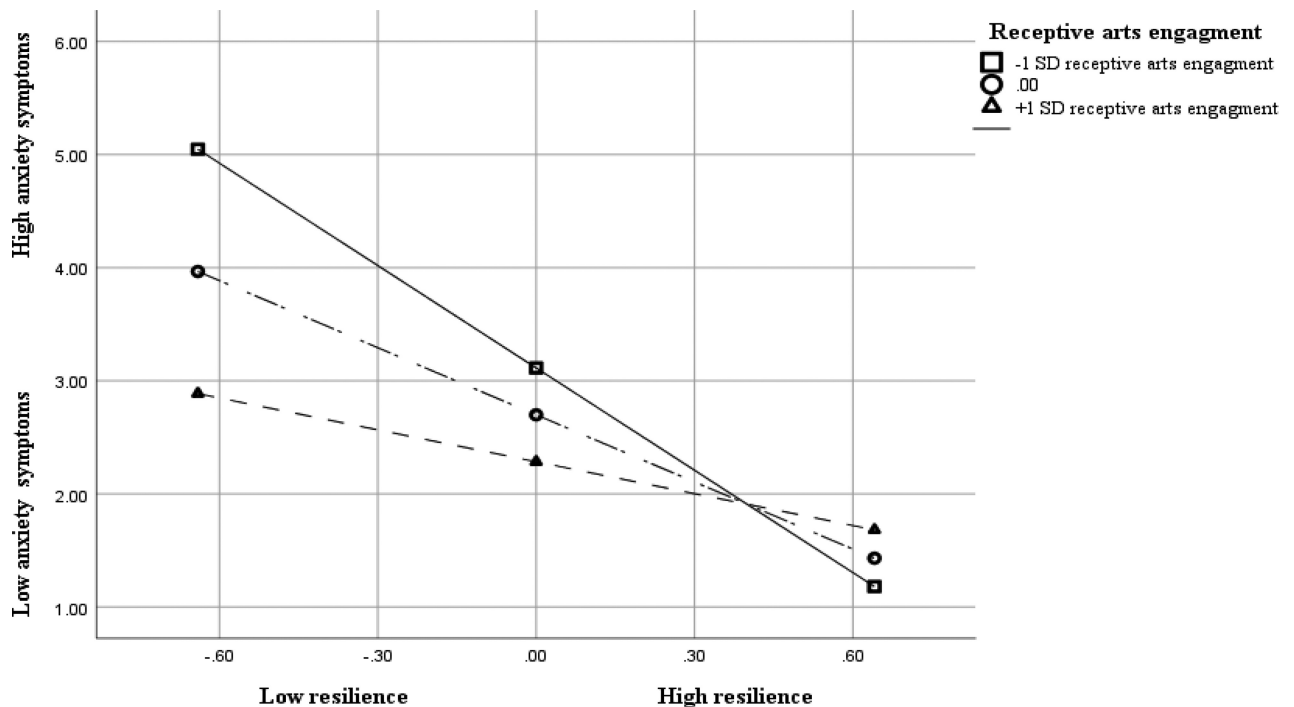


FIGURE 2. The moderating effect of receptive arts engagement on the association between resilience and general anxiety symptoms.

**TABLE 3.** Hierarchical Multiple Linear Regression for Predicting Anxiety Symptoms

	Predictor	$\Delta R^2$	B	SE	$\beta$	t	LLCI	ULCI	p
Step 1		0.06							
	Age		1.74	0.05	0.00	0.00	-0.01	0.01	1.00
	Sex		1.44	0.69	0.17	2.10	0.08	2.80	0.04*
	Marital status		0.74	0.72	0.08	1.02	-0.68	2.15	0.31
	Education		-0.44	0.66	-0.05	-0.66	-1.74	0.87	0.51
	Self-rated health		-0.29	0.41	-0.07	-0.71	-1.10	0.52	0.48
	Economic situation		-0.72	0.40	-0.15	-1.83	-1.50	0.06	0.07
	Chronic medical conditions		0.14	0.23	0.05	0.61	-0.31	0.59	0.54
	Exposure to COVID-19-related situations		0.07	0.28	0.02	0.26	-0.48	0.62	0.80
	Behavioral change		0.13	0.13	0.07	1.00	-0.13	0.39	0.32
Step 2		0.15***							
	Resilience		-2.08	0.46	-0.33	-4.58	-2.98	-1.19	0.00***
	ArtE		-51	0.24	-0.15	-2.11	-0.99	-0.03	0.04*
Step 3		0.03**							
	Resilience × ArtE		0.64	0.24	0.19	2.64	0.16	1.12	0.01**
Total R <sup>2</sup>		0.24**							
N			191						

In each subsequent step, only the new variables are shown (and not those from previous steps). Data were mean centered before the analyses.

LLCI indicates lower levels for confidence interval; ULCI, upper levels for confidence interval.

\*p < 0.05.

\*\*p < 0.01.

\*\*\*p < 0.001.

that when this resource of engagement in receptive arts is absent, low levels of resilience are especially debilitating. High frequency of receptive arts engagement during routine seems to have a subsequent positive effect some weeks later from cessation. Although preliminary, the findings may suggest that closing cultural and arts centers for a long period may also be a risk factor for the mental health of older people, especially for those with low levels of resilience. Thus, perhaps as a society, policy may benefit if virtual receptive arts engagement is encouraged in times of lockdown via social media or internet.

Several limitations should be noted. First, the study was cross-sectional, thereby unable to discern causality. The convenience snowball sample might have been biased by its internet dissemination. Third, the study did not examine the effect of long cessation from receptive art engagement—this may be the topic of future studies. Finally, receptive arts engagement was measured by a single item, which may not capture the between-art variety or the way it may differentially affect participants.

In sum, this study examined the moderated effect of receptive arts engagement on the resilience–COVID-19 anxiety. The findings indicate that the level of receptive arts engagement moderates the association between resilience and anxiety symptoms. Namely, the coupling of low resilience with low receptive arts engagement levels was linked with very high COVID-19 anxiety levels.

### CONCLUSIONS

Among the various implications of the emergency regulations that have saved the physical health of older adults, yet have put them at risk for psychological health, such as increased loneliness, and its negative effects (Palgi et al., 2020), it is possible that ceasing receptive art engagement may also be a potential risk factor for this population. Policy makers should consider helping older adults by using online technologies and other platforms to provide digital arts events in online groups, online tours in the museums and galleries, and by using movies and videos of music concerts and performances during social isolation.

In addition to the digital platforms, it is also important to consider other settings as outdoors and small group formats to maintain older adults' receptive arts engagement in time of social isolation.

### DISCLOSURE

The authors declare no conflict of interest.

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APPENDIX

Appendix 1. COVID-19 Pandemic-Related Risk Status

The following statements characterize your current status with respect to the COVID-19 pandemic. Please mark "Yes" or "No" after each statement

1. I am in isolation after being exposed to the virus	Yes	No
2. I was in isolation after being exposed to the virus	Yes	No
3. I tested positive for COVID-19	Yes	No
4. I know people who are or have been in isolation	Yes	No
5. My family members and/or close friends are or have been in isolation	Yes	No
6. I know people who tested positive for COVID-19	Yes	No

Appendix 2. Changes in 11 Pandemic-Related Behaviors

Indicate which changes have taken place in your behavior by marking the statements that apply to you

0. There have been no changes in my behavior
  1. Less shaking hands
  2. Less embracing
  3. Maintaining physical distancing more than others
  4. Avoiding social events
  5. Going out of the house less often
  6. Less inviting or meeting with friends
  7. Using a mask or gloves
  8. Going to public places less often
  9. Washing hands more often and maintaining cleanliness
  10. Doing more shopping to prepare for the crisis (gloves, masks, water, food, etc.)
  11. Cancellation or changes in major plans such as a flight, a trip, a family event, etc.