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Abstract: During the COVID-19 pandemic, the spread of the SARS-CoV-2 virus forced many individuals to confront their mortality and worry about losing loved ones also because social distancing policies often made it impossible to say goodbye. Those not directly experiencing loss were inundated with information about COVID-19-related deaths through various media, leading to vicarious grief. This study aims to explore the long-term effects of direct and vicarious mourning on people's mental health during the COVID-19 pandemic. A sample of 171 adults (65% female) aged 19 to 66 years (mean age = 25.8, SD = 8.57) voluntarily participated in an online survey assessing self-reported psychological measures of complicated grief, anxiety, stress, depression, dispositional neuroticism, and situational anxiety using the Fear of COVID-19 Scale. MANOVA tests revealed that individuals experiencing direct mourning had extremely severe scores for anxiety, stress, and fear of COVID-19, while those without personal losses had moderate scores. Participants reporting high media exposure had higher scores for depression and stress. In line with Terror Management Theory, the study supported that people during the COVID-19 pandemic engaged more in proximal defenses than distal ones, taking health-protective measures, experiencing increased anxiety levels toward SARS-CoV-2 infection, and feeling more distressed. Additionally, vicarious mourning was more strongly associated with depression due to emotional empathy with others. The discussion also addresses the strengths and limitations of the study.

Keywords: COVID-19 pandemic; mental health; anxiety; depression; stress; mourning; vicarious grief; media exposure; neuroticism

1. Introduction

One of the most long-term effects of the recent COVID-19 pandemic is the changing of the death representation and the subsequent grief elaboration, causing psychological consequences on people's mental health [1]. The Terror Management Theory (TMT) [2] and the subsequent development of the anxiety buffer disruption theory [3] provide insights into how individuals cope with exposure to death-related stimuli. The central postulate of TMT is that the awareness of their mortality – i.e., the mortality salience effect – leads individuals to perceive prominent levels of stress and anxiety due to the lack of control over the inevitability of death in some circumstances. Such knowledge, indeed, is a human prerogative due to individuals' cognitive ability and abstract thought, which, contrasting with self-preservation, posits a challenging and harsh living situation enhancing coping strategy against anxiety. For instance, to cope with death anxiety, individuals postulate their immortality after they die [4]. Empirical studies in the field of TMT have reported that in uncertain situations related to the incapacity to cope with uncontrolled illness, the threat of illness triggers the fear of death [5]. This was the case of the COVID-19 pandemic, which enhanced death anxiety, serving as a stressful life situation [6]. During the COVID-19 pandemic, the diffusion of the Sars-Cov2 virus infection causes most people to face their mortality and worry about losing their loved ones [7]. People become

afraid of getting sick and dying, avoid public spaces and private meetings for risks of infection, experience helplessness to protect loved ones, loss, remoteness, detachment, and death increasingly frequently [8]. A new form of situational anxiety, defined as the fear of COVID-19, arises worldwide [9], affecting Israel, Bangladesh, Japan, Brazil, Italy, and the Australian population, also presenting symptoms of depression, suicidal ideation, psychological distress, and increased alcohol consumption [9–13]. Besides, the COVID-19 pandemic led to feeling stuck in processing the mourning, difficulty moving on, and persistent yearning for the mourning. The grief reactions increased because of sudden death, untimely mourning, inadequate care, and social isolation, causing most people to become overwhelmed with grief [14]. Social distancing policies made it impossible to say goodbye to loved ones. Those who encounter the deceased isolate themselves, even though they are experiencing direct mourning. Also, people who did not directly have mourning experienced an overloading of information on all mass media about deaths related to the COVID-19 pandemic. In line with TMT, people enhanced their media exposure to gain information about the spread of the pandemic and seek control over illness-related worries [15]. However, a sort of infodemic with contradictory but catastrophic information defined and presented people with death anxiety, stress, and fear of not controlling the pandemic effects [16,17]. As reported by existing literature on public mourning in times of disaster or tragedy [16], people experienced during the COVID-19 pandemic not only direct grief related to the mourning of beloved ones but also the so-called vicarious grief [18], related to the grief experienced in response to someone else's mourning. People experiencing vicarious grief displayed reactions akin to, yet distinct from, those of direct mourning, including weeping, feelings of emptiness and heaviness, sleep and appetite disturbances, and preoccupation. As well, the prevalence rates of acute or complicated grief disorders have risen drastically during the COVID-19 pandemic [19]. Complicated grief disorder (CG) is a mental disorder classified in the DSM-5 as presenting symptoms emerging after the death of a family member or close friend (i.e., mourning). People with CG experience profound grief and loss, leading to clinically significant distress. They might display symptoms including depression, emotional pain, numbness, loneliness, disturbances in their sense of identity, and challenges in managing interpersonal relationships. Difficulty accepting the loss is also anticipated and can manifest as ongoing rumination about the death, an intense longing for reunion with the deceased, or disbelief that the death has happened. Recent studies corroborated increasing CG and post-traumatic stress, depression, and anxiety symptoms among American adults bereaved due to COVID-19 [20,21], as well as among Brazilian [22] and Chinese adults [23]. As well, studies showed that the intensity of CG in those bereaved by COVID-19 mourning is much higher in comparison to those bereaved by other causes of death [24].

Moreover, the present study focuses on media exposure to death-related information about the COVID-19 pandemic and psychological distress related to direct and vicarious grief. Consistent with previous research, media exposure offers extensive and detailed information about stressful events, which can heighten awareness of one's vulnerability and mortality, potentially leading to anxiety and stress-related disorders [25]. Indeed, the constant stream of accurate and fake news incites confusion, uncertainty, and panic, enhancing individuals' mental health symptoms [26–28]. Also, personality traits such as neuroticism, defined under the Five Factors model [29], and fear of COVID-19 could contribute to modulating individuals' distress levels [30,31]. Thus, the current study first aims to explore the linear associations between CG, distress, neuroticism, and fear of the COVID-19 pandemic in a sample of Italian adults to evaluate the risks of increasing mental health problems in the general population as COVID-19 pandemic long-term effect. Second, it aims to verify the effects of media exposure on CG and distress in people experiencing indirect mourning.

2. Materials and Methods

2.1. Participants

The study included a convenience sample of 171 adults (F=65%) aged between 19 and 66 years (mean age=25.8; SD±8.57; range: 19÷66), most of whom Italian (92,3%) with a high school degree (46,2%), or first/secondary-level degree (44,5%) voluntary enrolled without compensation. The

Declaration of Helsinki carried out the study and adopted ethical standards for conducting research in social sciences with humans. All participants provided written informed consent after receiving a complete description of the study's aim. The Bioethical Committee of the University of Palermo approved all recruitment and assessment procedures (n. 140/2023).

2.2. Measures and Procedure

All participants took part in an online survey, and data were collected by a Google form comprising the following self-report measures:

-*COVID-19 Personal sheet* aimed at registering socio-demographic variables (i.e., gender, age, nationality, occupation, and educational level). To evaluate the impact of the COVID-19 pandemic at an individual level, three questions ask subjects to describe 1) if they were positive for SARS-Cov2 infection in the last year; 2) the gravity level of their symptoms on a scale from 1 to 10 points; 3) their health problems during the COVID-19 pandemic. In addition, one question asked participants to indicate whether a person close to them had contracted the SARS-Cov2 infection with lethal consequences, specifying the degree of kinship and affinity (i.e., as a 0/1 measure of the personal mourning). If the participants declared that they had not had significant mourning due to the SARS-Cov2 infection, they were asked another question indicating on a scale from 1 to 10 how often they believed they had been exposed to media reports dealing with death due to the COVID-19 pandemic (i.e., as a measure of media exposure to mourning).

- *Inventory Complicated Grief* (ICG –Italian adaptation form) [32]. It is a 19-item self-report questionnaire aimed at measuring complicated grief. Each item scores on a Likert scale with anchors from 0=never to 3=always. The total score was obtained by summing up the participants' scores at each questionnaire item. It was comprised from 0 to 74, with scores greater than 25 points indicating high levels of complicated grief. In the current study, the ICG standardized Cronbach's alpha value was about .972, showing excellent internal consistency.

- *Depression Anxiety Stress Scales-21* (DASS-21) [33]. It is a 21-item self-report scale offering a measure of psychological distress in the three different components of Depression, Anxiety, and Stress (each subscale of 7 items). Each item scores on a Likert scale with anchors from 0=never to 3=always. To calculate the total scores for each subscale, the score of each item group was multiplied by two. [34]. The clinical cut-offs for each scale's scores were as follows:

- Depression subscale (Cronbach's alpha=.935): average score: 0-9 points; mild score: 10-13 points; moderate score: 14-20 points; severe score: 21-27 points; extremely severe score: more than 28 points.

- Anxiety subscale (Cronbach's alpha=.884): average score: 0-7 points; mild score: 8-9 points; moderate score: 10-14 points; severe score: 15-19 points; extremely severe score: more than 20 points.

- Stress subscale (Cronbach's alpha=.927): average score: 0-14 points; mild score: 15-18 points; moderate score: 19-25 points; severe score: 26-33 points; extremely severe score: more than 34 points.

- *Personality Inventory* [35]. It is a 20-item self-report questionnaire measuring personality in the light of the Big Five theory. [29]It comprises five subscales, each of 4 items, related to Extraversion, Conscientiousness, Agreeableness, Neuroticism, and Openness. Each item scores on a Likert scale with anchors from 1=never to 5=always. In the current study, we apply only the Neuroticism subscale (Cronbach's alpha=.665). The total score was calculated by summing participants' scores at each item of the scale, and it ranged from 0 to 20 points, with high scores indicating high levels of neuroticism.

- *Fear of COVID-19 scale* (FCV-19S) [36]. It is a 7-item self-report questionnaire aimed at measuring a form of situational anxiety related to the fear of being infected by the SARS-Cov2 virus. Each item scores on a Likert scale with anchors from 1 = strongly disagree to 5 = strongly agree. The total score was computed by summing participants' scores at each item of the scale, and it was comprised of 7 to 35 points, with high scores indicating high levels of fear of

COVID-19. In the current study, the FCV-19S standardized Cronbach's alpha value was about .916, showing excellent internal consistency.

All participants were recruited by a snowballing procedure, posting the form on multiple social media groups of students attending the psychology courses at the University of Palermo (e.g., Facebook, Instagram, WhatsApp groups). The inclusion criteria were: (1) being 18 years old and over, (2) having experienced the personal mourning of someone due to the COVID-19 pandemic, and (3) having been exposed to the mourning of someone due to the COVID-19 pandemic in media (e.g., television, social media). Data were collected in the period between April and June 2023, about a year after the abolition in Italy of the sanitary emergency state (Italian law decree n. 24, 24 March 2022) and the declaration of the World Health Organization end of COVID-19 pandemic (WHO, 5 May 2023). This choice allowed us to evaluate the participants' long-term risk of complicated grief both in the case of personal mourning due to COVID-19 infection and in the case of mediatic exposure of mourning. Participants filled out the form on average in about 10-15 minutes. When sending it, data were automatically registered on an EXCEL sheet, downloaded by researchers at the end of the data collection phase.

2.3. Statistical Analyses

All data were analyzed using the SPSS-Statistical Package for Social Science (IBM SPSS Statistics - Version 27), and descriptive statistics (e.g., frequencies, media, SD), linear Pearson's correlations, Cronbach's alpha values, and Multivariate Analyses of Variance (MANOVA) were calculated.

3. Results

3.1. Descriptive Statistics

Table 1 shows the impact of the COVID-19 pandemic on all participants' health. Most participants (64%) were positive for SARS-Cov2; of these, they were primarily female (66%). However, on average, they affirmed that the gravity of their symptoms was low (mean COVID-19 gravity index=4.53; range 0÷10). Also, most participants affirmed that they did not have significant health problems during the COVID-19 pandemic (56%). On the contrary, those who reported health problems affirmed that they had experienced anxiety (16%), mood alteration (5%), depression (2%), insomnia (10%), apathy (5%), and organic problems (6%).

Table 1. Positivity to SARS-Cov2 and health problems in the whole sample (N=171).

| | N (%) | | | | | |
| | N=171 | | Males (n=60) | | Females (n=111) | |
	Yes	No	Yes	No	Yes	No
Positivity to SARS-Cov2	109 (64%)	62 (36%)	35 (58%)	25 (42%)	75 (66%)	38 (34%)
Health problems	75 (44%)	98 (56%)	20 (30%)	40 (70%)	57 (50%)	56 (50%)

Only 25% of participants had significant personal mourning due to the COVID-19 pandemic and specifically their loss regarded parents (4%), grandparents (5%), uncle/auntie (4%), friends (6%) and related relatives as brother-in-law, son-in-law, daughter-in-law, or cousins (6%). Seventy-five percent of participants had no personal mourning due to the COVID-19 pandemic. However, it affirmed that they had been significantly exposed to mourning during the pandemic, showing a media exposure to mourning mean value of 7.68 points (range 0÷10 points).

Table 2 shows linear Pearson's correlation among the measures of complicated grief, psychological distress, fear of the COVID-19 pandemic, and neuroticism for the whole sample of participants.

Table 2. Pearson's linear correlations for all the studied variables (N=177).

	1	2	3	4	5	6
ICG	-					
DASS-21 Depression	.391*	-				
DASS-21 Anxiety	.560*	.800*	-			
DASS-21 Stress	.418*	.893*	.826*	-		
FCV-19S	.384*	.421*	.481*	.435*	-	
PI- Neuroticism	.273*	.502*	.462*	.470*	.242*	-

Note - *Correlation is significant at p<.001 (two tiles); ICG= Inventory Complicated Grief; DASS= Depression Anxiety Stress Scales; FCV-19S= Fear of COVID-19 scale; PI= Personality Inventory

Linear Pearson's correlation values show significant intercorrelations among all the study variables, evidencing a solid consistency of the measurement assessment. In line with previous literature [37], complicated grief is related to all the subscales of psychological distress, evidencing that the mourning experience, even if related to media exposure, has a significant impact on the mental health of participants.

3.2. The Effect of Direct Mourning due to the COVID-19 Pandemic on Psychological Distress, Neuroticism, and Fear of COVID-19

To evaluate the effect of direct mourning during the COVID-19 pandemic, Multivariate analysis of variance (MANOVA) on scores at measures of psychological distress, neuroticism, and fear of COVID-19 was performed comparing people who had a personal loss (G1) and people who had not (G2). Results show a significant multivariate effect of Group on the dependent variables, $F_{(5, 165)}=6.20$, $p<.01$, $\eta^2=1$; and significant univariate effects between the two groups on scores at DASS-21 anxiety and at the Fear of COVID-19 scale, as reported in Table 3.

Table 3. Univariate MANOVA results for G1 and G2.

	G1-Direct mourning (*n*=41; F=28; M=13)		G2-No mourning (*n*=130; F=84; M=46).		F (5, 165)	p	η^2
	M	DS	M	DS			
DASS-21 Depression	23.02	14.8	20.8	17.4	0.50	.50	.10
DASS-21 Anxiety	20.6	13.2	14.09	14.1	6.9	<.001	.74
DASS-21 Stress	29.02	14.05	24.9	17.3	1.8	.17	.27
FCV-19S	18.6	7.4	13.1	6.2	21.7	<.001	.99
PI- Neuroticism	11.8	3.8	11.1	3.3	1.1	.28	.18

Note - DASS= Depression Anxiety Stress Scales; FCV-19S= Fear of COVID-19 scale; PI= Personality Inventory

Significant differences between the two groups on scores at the DASS-21 Anxiety subscale, with people having direct mourning showing extremely severe scores, whereas people without personal loss showing moderate ones have emerged. The results also evidence a significantly similar trend of higher scores of people having direct mourning than those without losses at the fear of COVID-19 test. No significant differences have emerged in the scores at the DASS-21 Stress and Depression subscale nor at the PI neuroticism scale.

3.3. The Effect of Complicated Grief during the COVID-19 Pandemic on Psychological Distress, Neuroticism, and Fear of COVID-19 of People with Personal Losses

To evaluate the effect of complicated grief in people experiencing direct mourning during the COVID-19 pandemic, the G1 sample was divided into two subgroups, the High ICG Group, and the Low ICG Group, using the median value of ICG total score equal to 17. Then, a Multivariate analysis of variance (MANOVA) on scores at measures of psychological distress, neuroticism, and fear of COVID-19 was performed. Results show a non-significant multivariate effect of Group on the

dependent variables, $F(5, 35)=1.40$, $p=0.24$, $\eta^2=0.43$, but significant univariate effects between the two groups on scores at all DASS-21 subscales, as reported in Table 4.

Table 4. Univariate MANOVA results for the High vs. Low ICG Groups. High ICG Group in G1 (i.e., people with direct mourning)

	High ICG Group (*n*=20; F=14; M=6)		Low ICG Group (*n*=21; F=14; M=7).		F (5, 35)	p	η^2
	M	DS	M	DS			
DASS-21 Depression	28.3	12.9	18.0	15.0	5.4	<.05	.62
DASS-21 Anxiety	26.1	12.4	15.5	12.0	7.6	<.01	.76
DASS-21 Stress	34.1	12.9	24.1	14.6	5.2	<.05	.60
FCV-19S	20.3	7.0	17.1	7.6	1.9	.17	.27
PI- Neuroticism	12.7	3.7	11.0	3.7	2.2	.14	.30

Note - DASS= Depression Anxiety Stress Scales; FCV-19S= Fear of COVID-19 scale; PI= Personality Inventory

3.4. The effect of Media Exposure of Mourning during the COVID-19 Pandemic on Psychological Distress, Neuroticism, and Fear of COVID-19 in People without Personal Losses

To analyze the effect of the media exposure to the mourning of unrelated people on psychological distress, a MANOVA was performed on the studied variables on data related to G2 (i.e., people who had not a personal loss due to the COVID-19 pandemic). Specifically, using the median value on the media exposure indicator, equal to 8, the G2 sample was divided into High and Low Exposure Groups. Then, a MANOVA was performed with independent groups to measure scores for all the psychological measures. Results show a significant multivariate effect of Group on the dependent variables, $F(5, 124)=3.3$, $p<.01$, $\eta^2=.89$; and significant univariate effects between the two groups on scores at DASS-21 Depression and Stress subscales, with HEG having higher scores than LEG as reported in Table 5. No significant difference has emerged between the two subgroups on the DASS Anxiety subscale, fear of COVID-19 questionnaire, or PI neuroticism scale.

Table 5. Univariate MANOVA results for the High vs. Low Exposure Groups. High Exposure Group in G2 (i.e., people with vicarious mourning).

	High Exposure Group (*n*=56; F=40; M=16)		Low Exposure Group (*n*=74; F=44; M=30)		F	p	η^2
	M	DS	M	DS			
DASS-21 Depression	26.0	19.2	16.1	14.4	11.2	<.001	.91
DASS-21 Anxiety	16.2	15.5	12.4	12.6	2.3	.12	.33
DASS-21 Stress	29.0	17.8	21.3	15.6	6.9	<.01	.74
FCV-19S	14.2	6.5	12.7	6.2	1.7	.19	.25
PI- Neuroticism	11.4	3.8	11.0	3.2	0.38	.53	.09

Note -DASS= Depression Anxiety Stress Scales; FCV-19S= Fear of COVID-19 scale; PI= Personality Inventory

4. Discussion

The present study aimed to analyze the long-term impact of the COVID-19 pandemic on people's psychological distress and dispositional or situational anxiety due to personal mourning of closers who contracted the SARS-Cov2 infection with lethal consequences as well as the media exposure to the mourning of not-related people.

Pearson's correlational test results evidenced a significant correlation between all the studied variables in line with prior literature showing a general effect of social distancing measures and social isolation on mental health during the COVID-19 pandemic in Italy [38,39]. As well, results comparing people who had direct mourning because of the COVID-19 pandemic (i.e., G1) and those who had not (i.e., G2) show that G1 is more anxious and stressed and presents higher levels of fear of being infected by Sars-Cov2. This result is obviously due to the pandemic experience of death. Nevertheless, even if death is a natural human life, the COVID-19 pandemic presented novel and unexpected characteristics people have never experienced before. Death usually occurs during hasty medical crises, in the condition of patients' isolation, loneliness, and alienation, bringing a sort of dehumanization of bereavements; thus, people who lost their relatives experienced the death of their family members and the subsequent separation as more traumatic than usual [40]. The isolation due to the social distancing measures for preventing the spread of the COVID-19 pandemic, the lack of physical contact and adequate emotional support, as well as preparation for death, the suspension of funeral rituals and practices, and the actual loss of family members or relatives can be considered significant stressors during their direct mourning process [41]. Furthermore, in line with prior studies carried out before the COVID-19 pandemic on bereaved families unable to say goodbye to the deceased before death and who experienced an excessive sense of guilt [42,43] and a lack of support from their social network [44], a recent study conducted during the COVID-19 pandemic highlighted that unresolved mourning conditions are associated with mental health problems in the examined population [45].

The present study also offers a picture of the long-term effect of the death experience during the COVID-19 pandemic, analyzing the mental health consequences both for people with direct mourning and those with vicarious ones. To this point, the results of the study offer two different pictures showing that inside the G1, comparing people with high vs. low scores at ICG, endure symptoms of psychological distress and situational anxiety, highlighting a sort of complicated grief. This result aligns with the theoretical framework of TMT [46,47] and highlights the well-known distinction between proximal defenses, which address the problem of death directly, and distal defenses, which lack a logical connection to death but enable individuals to perceive it as a significant, meaningful, lasting, and valuable contribution to the universe [48]. When thoughts of death become conscious, proximal defenses are activated, on one side, to suppress thoughts and to relegate death to a distant future, removing vulnerability to anything that could lead to it; on the other side, to continue to adopt healthier behaviors to ensure a long life. However, when thoughts of death are on the fringes of consciousness, people focus on faith, mobilizing their distal defenses and considering their cultural vision. Fear is the primary emotion selected by human evolution to survive and, at the same time, defend itself. It also pushes people to adopt protective behaviors to prevent and avoid death in the face of potential danger. The TMT assumes that when thoughts of death are frequent, subjects seek to eliminate them from their consciousness by a simple process of suppression, denial of threat, or taking measures to reduce their vulnerability [4,46]. In line with prior studies [6,49], our results corroborated the idea that people who directly perceived the death of loved ones applied proximal defenses more than distant ones, taking measures to protect their health, such as social distancing, increasing hygiene practices such as hand and surface washing, and the use of protective equipment in public places still after the end of the COVID-19 pandemic emergency [50]. However, this is not without personal mental health consequences since they feel more distressed and enhanced their anxiety levels toward the Sars-Cov2 infection. Under theoretical models [51–53], when individuals struggle to cope with existential fears and construct a meaningful life effectively, heightened death anxiety and maladaptive ways of addressing this anxiety are anticipated outcomes. Empirical research has further indicated that reminders of mortality can intensify phobias, compulsive behaviors, depressive symptoms, and anxiety [54]. This phenomenon may help elucidate findings from recent reviews linking pandemics to increased reports of anxiety, depression, and stress [55,56]. Both death anxiety and ineffective or dysfunctional anxiety management strategies have been identified as potential diagnostic vulnerability factors for mental disorders [57].

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The COVID-19 pandemic has brought about an unprecedented experience of vicarious grief, where individuals mourn losses that they have not directly experienced but have observed in others. This collective grief has been intensified by constant media coverage of the pandemic's toll, leading to widespread feelings of sorrow and empathy for those affected. Indeed, the results of the current study evidenced significant differences between HEG and LEG of G2. Specifically, HEG obtained higher LEG scores on the DASS-21 Depression scale, aligning with prior studies. The recent psychological literature examining depression in the context of COVID-19 through TMT posits that the pervasive awareness of death due to the pandemic has exacerbated symptoms of depression, particularly among individuals with pre-existing mental health conditions. For instance, a study found that increased mortality salience during COVID-19 led to heightened depressive symptoms, especially in those with lower levels of self-esteem and social support [58]. Additionally, research suggests that the fear of COVID-19 has amplified existential dread, contributing to a rise in depressive disorders as individuals struggle to find meaning and security in an uncertain world [59]. Likewise, vicarious grief has become a significant psychological phenomenon during the pandemic, as individuals are exposed to stories of loss and suffering on a global scale [24]. The pervasive nature of these narratives, combined with social isolation and uncertainty, has heightened emotional distress even among those who have not personally lost someone to the virus. Similarly, a study highlights that healthcare workers have experienced profound vicarious grief as they witness ongoing loss and trauma within their professional roles. This form of grief has contributed to increased levels of burnout and mental health challenges among frontline workers [24]. During the COVID-19 pandemic, vicarious grief was observed among health professionals, who reported significant emotional responses like those experienced by direct mourners. This included feelings of anxiety, depressive mood, exhaustion, and tears during grief-related tasks, reflecting common reactions seen in individuals bereaved by COVID-19 deaths [60].

The current study's findings should be considered based on several strengths and limitations. A first strength is that studying the long-term effects of the COVID-19 pandemic provides the significant benefit of enabling researchers and policymakers to understand the enduring psychological impacts, such as chronic anxiety, depression, and PTSD, which may persist long after the immediate crisis has ended. This understanding is crucial for developing effective mental health interventions and support systems tailored to address these lasting issues. A second strength relies on the comparison provided by the current study about both direct and vicarious mourning during the pandemic, enhancing the clinical understanding of the broad spectrum of emotional responses to loss related to psychological distress, recognizing that grief is not limited to personal bereavement but also includes the empathy and sorrow felt for others. This comprehensive perspective is crucial for developing holistic mental health support systems that address the needs of individuals experiencing direct loss as well as those affected by the collective trauma of the pandemic. Additionally, it informs the creation of targeted interventions and resources to support mental well-being, fostering resilience in communities facing ongoing and future crises. A final strength is that investigating the long-term mental health effects of the pandemic can inform future crisis management strategies. Insights gained from these studies can guide preparations for potential public health emergencies, ensuring that mental health considerations are integrated into response plans to protect and support populations better. Nevertheless, future research is needed to address the limitations of this study. The first limitation relies on the cross-sectional approach and the lack of testing causal associations between variables. Secondly, the study utilized an online questionnaire-based survey, and all variables were assessed through self-report measures, which are susceptible to various biases, such as social desirability bias, as well as inaccuracies due to memory errors or subjective interpretations of the questions. The current online survey could have limited the sample's representativeness to people having access to the internet and familiarity with digital tools, potentially excluding specific populations from the study. This could have led to a sample not fully representative of the broader population, thus limiting the generalizability of the current findings. Also, while self-report surveys are convenient and cost-effective, they often lack the depth and nuance that can be obtained through other methods, such as in-depth interviews or observational

studies. These alternative methods can provide more prosperous, more detailed data that can more effectively capture the complexities of the participants' experiences. To address these limitations, future research should consider incorporating a mix of methodologies, such as combining self-report surveys with objective measures and qualitative methods. Additionally, efforts should be made to ensure a more diverse and representative sample, potentially through targeted recruitment strategies and providing multiple ways for participants to engage with the study. A final limitation of the current study is that it focuses on the general population and cannot identify vulnerable populations who are disproportionately affected by the pandemic, such as healthcare workers, individuals with pre-existing mental health conditions, and those experiencing prolonged social isolation. Future studies should be performed to recognize these at-risk groups, targeted support, and resources to mitigate adverse outcomes.

5. Conclusion

The findings of the current study underscore the importance of addressing existential fears and enhancing psychological resilience to mitigate the long-term impact of the pandemic on mental health. Interventions that foster a sense of meaning and connectedness may be particularly effective in reducing psychological distress, such as anxiety and depression linked to heightened mortality awareness during global crises. These findings also emphasize the need for mental health support systems to address vicarious grief, providing clinical treatment aimed at enhancing coping strategies and emotional support to mitigate its impact. Understanding and acknowledging vicarious grief can help clinicians develop targeted interventions to support the general population after the pandemic.

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