

COVID-19, natural, and unnatural bereavement: comprehensive comparisons of loss circumstances and grief severity

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ABSTRACT

Background: Acute grief appears more severe after COVID-19 deaths than natural deaths. Prolonged grief disorder (PGD) also appears prevalent following COVID-19 deaths. Researchers hypothesize that specific loss characteristics and pandemic-related circumstances may precipitate more severe grief following COVID-19 deaths compared to (other) natural deaths. Systematic research on these hypotheses may help identify those most at risk for severe grief reactions, yet it is scant.

Objective: To compare loss characteristics, loss circumstances, and grief levels among people bereaved due to COVID-19, natural, and unnatural causes.

Methods: Adults bereaved through COVID-19 ($n = 99$), natural causes ($n = 1006$), and unnatural causes ($n = 161$) completed an online survey. We administered self-report measures of demographic variables (i.e., age, gender), loss characteristics (i.e., time since loss, relationship with the deceased, intensive care admission, expectedness of death), loss circumstances (i.e., saying goodbye appropriately, COVID-19 infection, quarantine, financial setbacks, social support satisfaction, altered funeral arrangements, funeral satisfaction), and prolonged grief symptoms.

Results: COVID-19 deaths (vs. other deaths) more often were parental deaths and less often child deaths. COVID-19 deaths (vs. natural deaths) were more often unexpected and characterized by an inability to say goodbye appropriately. People bereaved due to COVID-19 (vs. other deaths) were more often infected and quarantined. COVID-19 deaths (vs. other deaths) more often involved intensive care admission and altered funeral arrangements. COVID-19 deaths yielded higher grief levels than natural deaths (but not unnatural deaths). Expectedness of the death and the inability to say goodbye appropriately explained this effect.

Conclusions: Bereavement due to COVID-19 is characterized by a unique set of loss characteristics and circumstances and elevated grief levels. Improving opportunities to say goodbye before and after death (e.g., by means of rituals) may provide an important means to prevent and reduce severe grief following COVID-19 deaths.

COVID-19, duelo natural y no natural: comparaciones exhaustivas de las circunstancias de la pérdida y la gravedad del duelo

Antecedentes: El duelo agudo es más severo después de las muertes por COVID-19 que las muertes naturales. El trastorno de duelo prolongado (PGD, por sus siglas en inglés) también parece ser prevalente después de las muertes por COVID-19. Los investigadores plantean la hipótesis de que las características específicas de la pérdida y las circunstancias relacionadas con la pandemia pueden precipitar un duelo más severo después de las muertes por COVID-19 en comparación con las muertes naturales. La investigación sistemática sobre estas hipótesis puede ayudar a identificar a las personas con mayor riesgo de sufrir reacciones de duelo graves, pero es escasa.

Objetivo: Comparar las características de la pérdida, las circunstancias de la pérdida y los niveles de duelo entre las personas en duelo debido al COVID-19, causas naturales y no naturales.

Métodos: Adultos en duelo por COVID-19 ($n = 99$), causas naturales ($n = 1006$) y causas no naturales ($n = 161$) completaron una encuesta en línea. Administramos medidas de autoinforme de variables demográficas, características de la pérdida (es decir, ingreso en cuidados intensivos, muerte inesperada), circunstancias de la pérdida (es decir, despedirse adecuadamente, infección por COVID-19, cuarentena, contratiempos financieros, satisfacción con el apoyo social, arreglos funerarios alterados, satisfacción con el funeral), y síntomas de trastorno de duelo prolongado.

Resultados: Las muertes por COVID-19 (frente a otras muertes) fueron con mayor frecuencia muertes de padres y menos muertes de niños. Las muertes por COVID-19 (frente a las muertes

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关键词

冠状病毒、COVID-19、哀伤、丧亲、死亡、延长哀伤障碍、复杂性哀伤、调查和问卷

HIGHLIGHTS

- COVID-19 deaths have unique loss characteristics and circumstances and elicit more severe grief than natural deaths.
- Death expectedness and the ability to say goodbye appropriately appear important in understanding, preventing and treating grief following COVID-19 deaths.

naturales) fueron más a menudo inesperadas y se caracterizaron por la incapacidad de despedirse adecuadamente. Las personas en duelo debido al COVID-19 (frente a otras muertes) más frecuentemente se infectaron y tuvieron que hacer cuarentena. Las muertes por COVID-19 (en comparación con otras muertes) involucraron con mayor frecuencia la admisión a cuidados intensivos y la alteración de arreglos funerarios. Las muertes por COVID-19 produjeron niveles de duelo más altos que las muertes naturales (pero no las muertes no naturales). La expectativa de la muerte y la incapacidad de decir adiós explicaron apropiadamente este efecto.

Conclusiones: El duelo por COVID-19 se caracteriza por un conjunto único de características y circunstancias de pérdida y niveles elevados de duelo. Mejorar las oportunidades para decir adiós antes y después de la muerte (p. ej., mediante rituales) puede proporcionar un medio importante para prevenir y reducir el duelo después de las muertes por COVID-19.

COVID-19、自然和非自然丧亲：丧失情况和哀伤严重程度的综合比较

背景: COVID-19 死亡后的急性哀伤比自然死亡更为严重。在 COVID-19 死亡后，延长哀伤障碍 (PGD) 似乎也很普遍。研究人员假设，与自然死亡相比，COVID-19 死亡后的特定丧失特征和疫情相关情况可能会引发更严重的哀伤。对这些假设的系统研究可能有助于确定那些最有可能发生严重哀伤反应的人，但很不足。

目的: 比较因 COVID-19、自然和非自然原因丧亲者的丧失特征、丧失情况和哀伤程度。

方法: 因 COVID-19 ($n = 99$)、自然原因 ($n = 1006$) 和非自然原因 ($n = 161$) 而丧亲的成年人完成了一项在线调查。我们对人口变量、丧失特征 (即重症监护、意外死亡)、丧失情况 (即恰当告别、COVID-19 感染、隔离、经济挫折、社会支持满意度、改变葬礼安排、葬礼满意度) 和延长哀伤障碍症状。

结果: COVID-19 死亡 (相较于其他死亡) 更多是父母死亡，更少儿童死亡。COVID-19 死亡 (相较于自然死亡) 通常是出乎意料的，其特点是无法恰当告别。因 COVID-19 而丧亲者 (相较于其他死亡) 更经常受到感染和隔离。COVID-19 死亡 (相较于其他死亡) 更多涉及重症监护和改变葬礼安排。COVID-19 死亡带来的哀伤程度高于自然死亡 (但不高于非自然死亡)。对死亡的预期和无法恰当告别解释了这种影响。

结论: 因 COVID-19 丧亲具有一系列独特丧失特征和情况以及哀伤程度升高的特征。增加死前和死后告别的机会 (例如，通过仪式) 可能是预防和减少 COVID-19 死亡后哀伤的重要手段。

Dear Editor,

With over 6 million registered deaths the COVID-19 pandemic has left an estimated 54 million people bereaved worldwide (Verdery, Smith-Greenaway, Margolis, & Daw, 2020; World Health Organization, 2022). COVID-19 deaths are believed to increase the prevalence of severe, persistent and disabling grief, termed prolonged grief disorder (PGD) (Eisma, Boelen, & Lenferink, 2020; Wallace, Wladkowski, Gibson, & White, 2020). PGD is included in the International Classification of Diseases eleventh edition (ICD-11: World Health Organization, 2018) and in a different form in the text revision of the Diagnostic and Statistical Manual of Mental Disorders 5 (DSM-5-TR: American Psychiatric Association, 2020).

Specifically, loss characteristics, such as intensive care admission and unexpected death, and loss circumstances, such as infection, quarantine, difficulties saying goodbye, altered funeral services, financial setbacks, and reduced social support, are hypothesized to interfere with the grieving process (e.g. Eisma et al., 2020; Wallace et al., 2020). Accordingly, many researchers predict a worldwide increase in PGD and associated mental health problems (e.g. Eisma et al., 2020; Gesi et al., 2020; Simon, Saxe, & Marmar, 2020).

Some quantitative studies have shed light on grief following COVID-19 deaths. One study showed that

acute grief in the first 6 months post-loss is more severe following COVID-19 deaths than (other) natural deaths but not unnatural deaths (Eisma, Tamminga, Smid, & Boelen, 2021). Other researchers demonstrated high symptom levels of acute and prolonged grief, posttraumatic stress, depression, and anxiety in COVID-19 bereaved samples (Breen, Lee, & Neimeyer, 2021; Murata et al., 2021; Tang, Yu, Chen, Fan, & Eisma, 2021). Together, this suggest a higher prevalence of PGD and related mental health problems following COVID-19 deaths (Eisma & Boelen, in press).

To identify who is most at risk following COVID-19 deaths, some researchers have examined associations between demographic and loss-characteristics and grief in COVID-19 bereaved samples (Breen et al., 2021; Eisma et al., 2021; Neimeyer & Lee, 2021; Tang et al., 2021). However, the specific loss characteristics and circumstances proposed to aggravate grief reactions to COVID-19 deaths have not systematically been compared across causes of death, making it unclear whether such factors explain variations in grief reactions. Therefore, we aimed to conduct a comprehensive comparison of such loss characteristics and circumstances between samples of adults who have experienced deaths due to COVID-19, natural causes, and unnatural causes. We included

variables that have been previously examined in this context, including the relationship with the deceased, expectedness of the death, and satisfaction with social support (e.g. Eisma et al., 2021). Additionally, we have included variables that have been proposed to influence grief following COVID-19 deaths, yet that have not yet been compared across loss types, namely pre-death intensive care admission, the opportunity to say goodbye, altered funeral arrangements, satisfaction with the funeral, being infected with COVID-19 and quarantined oneself, and experiencing financial setbacks. We predicted that grief levels following COVID-19 deaths are higher than following natural deaths (Eisma et al., 2021). We explored which loss characteristics and circumstances explain these differences to help identify factors that could be instrumental in preventing and mitigating severe grief reactions following COVID-19 deaths.

Methods

The Ethical Committee Psychology of the University of Groningen approved the present version of this ongoing study (date: 7-12-2021, registration number: PSY-1819-S-0175). Adult bereaved participants were recruited online on a Web site (www.psynd.nl) of a Dutch national mental health care organization (Psynd) where they could complete an online self-test for Persistent Complex Bereavement Disorder (Diagnostic and Statistical Manual of Mental Disorders 5, DSM-5, American Psychiatric Association, 2013). Before participating, people were presented with information about the study procedure such as aims, anonymity, and voluntariness. All participants provided online informed consent. After survey completion, participants received a preliminary indication if they met criteria for Persistent Complex Bereavement Disorder per DSM-5 accompanied by a cautionary message on its 12-month time-criterion and a disclaimer that only a licensed professional can establish diagnoses. Two papers were published on previously collected data within this project (Eisma & Tamminga, 2020; Eisma et al., 2021). The data analyzed for this study is new and was collected between December 2020 and August 2021. This data collection period included a national lockdown from December to March, the start of a vaccination programme in January, and loosening of government regulations from May to August.

The self-test included measures of demographic characteristics (age, gender), loss-related characteristics (time since loss, relationship with the deceased, cause of death, expectedness of the death, intensive care admission) and circumstances (opportunity to say goodbye appropriately, COVID-19 infection, quarantine, financial setbacks, and alterations in funeral arrangements). We assessed satisfaction with social support and satisfaction with the funeral on a

five-point Likert-scale (from very unsatisfied = 1 to very satisfied = 5). Grief severity was measured with the Traumatic Grief Inventory Self Report Plus (TGI-SR+) (Lenferink, Smid, de Keijser, & Boelen, 2022). This 22-item scale assesses current criteria for PGD per ICD-11 and DSM-5-TR on a five-point Likert-scale (from 1 = never to 5 = always). Since few adults bereaved due to COVID-19 within our sample met time-criteria of these disorders, summed scores of items tapping symptoms of PGD_{ICD-11} ($\alpha = .88$) and PGD_{DSM-5-TR} ($\alpha = .88$) were the dependent variables in the group comparisons.

Prior to the analyses, duplicates ($n = 53$), non-adults ($n = 60$), participants that did not complete the additional questions ($n = 15$), and participants labelling the cause of loss as 'different' ($n = 191$), were removed from the dataset, leaving 1266 participants. We compared participants who experienced a COVID-19-related loss ($n = 99$), natural loss ($n = 1006$), and unnatural loss (i.e. homicide, suicide, accident, $n = 161$). We assessed group differences on demographic and loss characteristics, loss circumstances, and symptom levels using Fisher's exact test for categorical variables and ANOVAs with Least Square Difference post-hoc tests (implying a two-sided significance level of .05 for these tests) for continuous variables. For significant group differences on grief levels, we examined which dummy coded loss-related variables explained differences with ANCOVAs. SPSS 26.0 was used for all analyses. We applied a two-sided significance level of .05. Missing data was handled through listwise deletion.

Results

Table 1 shows descriptive statistics and group comparisons of sociodemographic characteristics and loss characteristics and circumstances reported by adults bereaved by COVID-19, natural causes, and unnatural causes. COVID-19 deaths yielded higher grief levels than natural deaths (PGD_{ICD-11}, $d = 0.31$; PGD_{DSM-5-TR}, $d = 0.23$), but not unnatural deaths (PGD_{ICD-11} $d = 0.16$; PGD_{DSM-5-TR}, $d = 0.05$). Since comparison groups differed on time since loss, we ran a sensitivity analysis limiting group comparisons on grief levels to people bereaved within the last 6 months due to COVID-19 ($n = 76$), unnatural causes ($n = 50$), and natural causes ($n = 450$). This eliminated differences on time since loss between people bereaved due to COVID-19 and other causes ($ps > .15$). Again, COVID-19 yielded more severe acute grief levels than natural losses with the same effect sizes (PGD_{ICD-11}, $d = 0.35$, PGD_{DSM-5-TR}, $d = 0.23$). However, the effect on PGD_{DSM-5-TR} grief levels was only marginally significant ($p = .068$), likely due to power issues. Again, no significant differences in acute grief emerged between those bereaved by unnatural deaths and

Table 1. Group comparisons of COVID-19, unnatural, and natural bereavement on demographic and loss-related characteristics and grief levels.

	COVID-19 (<i>n</i> = 99)	Unnatural (<i>n</i> = 161)	Natural (<i>n</i> = 1006)	Group comparisons
Age (Mean (<i>SD</i>)) ^a	46.11 (15.24)	40.03 (14.77)	45.32 (15.47)	$F(2, 1245) = 8.61^{**}$, $C < U^*$, $N < U^{**}$
Female (<i>n</i> , %)	83, 84%	129, 80%	837, 83%	$p = .250$
Time since loss in months (Mean (<i>SD</i>)) ^b	4.31 (3.50)	42.57 (80.50)	26.28 (58.78)	$F(2, 1175) = 11.87^{**}$, $C < N < U^*$
Relationship with deceased (<i>n</i> , %)				$p < .001$
Partner	25, 25%	37, 23%	293, 29%	
Parent	61, 62%	32, 20%	482, 48%	$N < C^*$, $U < N$, C^{**}
Child	0, 0%	24, 15%	38, 4%	$C < N^*$, $U > N$, C^{**}
Sibling	1, 1%	28, 17%	48, 5%	$U > N$, C^{**}
Other family member	11, 11%	13, 8%	105, 10%	
Friend	1, 1%	27, 17%	40, 4%	$U > N$, C^{**}
Expectedness of death (<i>n</i> , %) ^c				$p < .001$
Expected	1, 1%	4, 3%	211, 21%	$N > C$, U^{**}
Unexpected	68, 69%	129, 80%	340, 34%	$N < C$, U^{**}
Both or neither	30, 30%	28, 17%	455, 45%	$N > U^{**}$, $N > C^*$, $C > U^*$
Pre-death intensive care admission (<i>n</i> , %)	63, 64%	25, 16%	164, 16%	$p < .001$, $C > U$, N^{**}
Said goodbye appropriately (<i>n</i> , %) ^d	20, 20%	24, 15%	546, 54%	$p < .001$, $N > C$, U^{**}
Infected with COVID-19 (<i>n</i> , %)				$p < .001$
No	51, 52%	135, 84%	900, 90%	$C < N$, U^{**} , $U < N^*$
Yes, no or mild symptoms	33, 33%	18, 11%	72, 7%	$C > N$, U^{**}
Yes, severe symptoms no hospitalization	12, 12%	7, 4%	33, 3%	$C > N^{**}$, $C > U^*$
Yes, severe symptoms and hospitalization	3, 3%	1, 1%	1, 0%	$C > N^*$
Quarantine (<i>n</i> , %)				$p < .001$
No	34, 34%	94, 58%	675, 67%	$C < N$, U^{**} , $U < N^*$
Yes, once	51, 52%	46, 29%	225, 22%	$C > N$, U^{**}
Yes, twice	9, 9%	15, 9%	80, 8%	
Yes, three times or more	5, 5%	6, 4%	26, 3%	
Financial setbacks (<i>n</i> , %)				$p = .364$
Yes, lost (part of) job	4, 4%	9, 6%	55, 6%	
Yes, company owner, lost (part of) income	4, 4%	7, 4%	32, 3%	
Yes, due to other reasons	5, 5%	12, 8%	37, 4%	
No, little or none	86, 87%	133, 83%	882, 88%	
Satisfaction with social support (Mean, <i>SD</i>)	3.32 (0.81)	3.08 (1.07)	3.21 (.98)	$F(2, 1263) = 2.03$, $p = .13$
Funeral alterations (<i>n</i> , %, multiple answers possible)				
Fewer people physically present	81, 82%	61, 38%	485, 48%	$C > N$, U^{**} , $N > U^*$
No physical contact	56, 57%	34, 21%	310, 31%	$C > N$, U^{**} , $N > U^*$
No alterations	7, 7%	88, 55%	431, 43%	$C < N$, U^{**} , $N < U^*$
Satisfaction with funeral (Mean, <i>SD</i>)	3.91 (0.94)	3.77 (1.12)	3.95 (1.03)	$F(2, 1263) = 1.99$, $p = .14$
Grief PGD ICD-11 (Mean, <i>SD</i>)	41.47 (7.40)	42.78 (8.44)	38.92 (8.43)	$F(2, 1263) = 17.41^{**}$, $C > N^*$, $U > N^{**}$
Grief PGD DSM-5-TR (Mean, <i>SD</i>)	39.23 (6.79)	39.63 (7.45)	37.52 (7.82)	$F(2, 1263) = 6.77^*$, $C > N^*$, $U > N^*$
Grief PGD ICD-11 \leq 6 months post-loss (Mean, <i>SD</i>)	41.75 (6.72)	42.90 (7.97)	39.06 (7.84)	$F(2, 552) = 8.47^{**}$, $C, U > N^*$
Grief PGD DSM-5-TR \leq 6 months post-loss (Mean, <i>SD</i>)	39.55 (6.27)	39.44 (7.81)	37.93 (7.30)	$F(2, 552) = 2.37$, $p = .095$

Note. C = COVID-19 loss; U = unnatural loss, N = natural loss.

^aMissing data for 21 participants.

^bMissing data for 89 participants. All other variables had no missing data.

^cQuestion: In the days before the death, have you had the opportunity to say goodbye in a way that is appropriate given your relationship with the deceased? (yes, no).

^dQuestion: The loss was ... (expected, unexpected, both expected and unexpected, neither – the last two answer options were collapsed into ‘both or neither’ before analyses).

* $p < .05$, ** $p < .001$. Comparisons that are not mentioned are not significant.

COVID-19 deaths ($PGD_{ICD-11} d = 0.16$; $PGD_{DSM-5-TR} d = 0.02$).

Using the full sample, we ran two ANCOVAs (see Supplemental File A), including variables showing significant group differences as (simplified dummy-coded) covariates and cause of death (natural vs. COVID-19) as a between-group factor, showing significant effects on PGD_{ICD-11} grief levels, $F(10, 1094) = 4.65$, $p < .001$, and $PGD_{DSM-5-TR}$ grief levels, $F(11, 1094) = 3.50$, $p < .001$. We regarded variables that related significantly to cause of death and grief levels that rendered the association between these variables insignificant as mediators of this relationship (cf. Baron & Kenny, 1986). Loss was ‘expected nor unexpected’ (vs. other), saying goodbye appropriately (vs. not), and death of a parent (vs. other relation), fully

explained the group difference for PGD_{ICD-11} grief severity, $F(1, 1094) = 2.95$, $p = .09$, explaining 63% of the relation between cause of death on grief severity. Loss was ‘expected nor unexpected’ (vs. other) and saying goodbye appropriately (vs. not) fully explained the group difference for $PGD_{DSM-5-TR}$ grief severity, $F(1, 1094) = 1.86$, $p = .17$, explaining 50% of the relation between cause of death and grief severity.

Discussion

Parental bereavement was more common and child bereavement was less common for COVID-19 deaths compared to other types of death. Indeed, older adults more frequently die from COVID-19 whereas children are more often not severely affected (Williamson et al.,

2020). COVID-19 deaths compared to natural deaths were more unexpected, which aligns with the results from one prior comparison study (Eisma et al., 2021). COVID-19 bereaved compared to naturally bereaved reported limited opportunities to say goodbye appropriately. Possibly, this can partly be explained by the fact that COVID-19 deaths versus other deaths are more frequently preceded by intensive care admission and anteceded by altered funeral services. Qualitative research has similarly identified a lack of appropriate goodbyes and funeral rites as an important stressor for people bereaved during the pandemic (e.g. Hamid & Jahangir, *forthcoming*). We also confirmed the occurrence of secondary stressors among COVID-19 bereaved persons (Eisma et al., 2020; Gesi et al., 2020). People experiencing COVID-19 deaths versus other deaths had themselves more often been infected and quarantined. Pandemic-related financial setbacks did not differ across groups. Satisfaction with both social support and funeral services did not differ across groups. This confirms that social support is not experienced differently across loss types (Eisma et al., 2021). Additionally, it suggests that the alterations of funeral services that are more often experienced by people bereaved due to COVID-19 do not strongly affect satisfaction with these services.

Grief levels were higher following COVID-19 deaths than natural deaths but not unnatural deaths, confirming findings from another comparative study (Eisma et al., 2021). Multivariate analyses demonstrated that this effect was consistently explained by expectedness and saying goodbye appropriately. Findings on expectedness complement prior research by Eisma et al. (2021) which showed that differences in grief levels between these losses were explained by the fact that COVID-19 deaths were less often expected than natural deaths. Whilst saying goodbye appropriately has not been previously considered as an explanatory variable, our findings suggest its potential importance in understanding more severe grief reactions following COVID-19 bereavement.

Whereas prior studies focused only on a few loss-related characteristics and circumstances proposed to affect grief due to COVID-19 deaths (e.g. Eisma et al., 2021; Tang et al., 2021), the present study focused on a more comprehensive selection of potential risk-factors (Eisma et al., 2020; Wallace et al., 2020). Additionally, the inclusion of different comparison groups of people experiencing natural deaths and unnatural deaths enabled us to establish the unique nature of loss-experiences and grief reactions associated with COVID-19 bereavement. Limitations include using a convenience sample, a cross-sectional design, and self-report measures. The first may pose a threat to external validity, the second precludes

conclusions about causality, and the third implied we could not establish diagnoses. Additionally, only Dutch bereaved adults were examined. While some experiences regarding COVID-19 deaths, such as unexpectedness, are likely similar across the globe, international variations in loss circumstances could influence grief reactions. Recommendations for future research include obtaining data from representative international samples, using longitudinal designs to examine predictors of symptom change, and employment of diagnostic interviews.

This study shows that COVID-19 deaths may yield more severe grief reactions than natural deaths, have unique characteristics, and occur within unique circumstances. While there are many hypotheses on what factors cause more severe grief following COVID-19 deaths compared to natural deaths (Eisma & Boelen, *forthcoming*; Stroebe & Schut, 2021) particularly death expectedness and saying goodbye appropriately appear important in understanding such differences in grief severity. Enabling people to say goodbye to their loved ones within palliative care setting appears an important goal to prevent severe grief reactions. Treatment of people with severe grief following COVID-19 deaths may be enhanced by exposure exercises focusing on the events surrounding the death and applying farewell rituals (Reitsma, Boelen, de Keijser, & Lenferink, 2021; Wojtkowiak, Lind, & Smid, 2021).

Disclosure statement

No potential conflict of interest was reported by the author(s).

Data availability statement

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

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