The Utility of the Pandemic Grief Scale in Identifying Functional Impairment from COVID-19 Bereavement

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Abstract

Background: Meeting the needs of people bereaved by COVID-19 poses a substantial challenge to palliative care. The Pandemic Grief Scale (PGS) is a 5-item mental health screener to identify probable cases of dysfunctional grief during the pandemic.

Objective: The PGS has strong psychometric and diagnostic features. The objective was to examine the incremental validity of the PGS in identifying mourners at risk of harmful outcomes.

Design: A cross-sectional survey design involving sociodemographic questions and self-report measures of pandemic grief, generalized anxiety, depression, post-traumatic stress, separation distress, functional impairment, meaning-making difficulties, and substance use coping.

Setting/Subjects: A sample of people bereaved through COVID-19 (N=1065) in the United States.

Results: Fully 56.6% of participants scored above the cut score of ≥ 7 on the PGS for clinically dysfunctional pandemic grief and 69.7% coped with their loss using drugs or alcohol for at least several days in past two weeks. PGS scores were not associated with time since loss. Hierarchical multiple regression models demonstrated that the PGS uniquely explained variance in functional impairment, meaning-making difficulties, and substance use coping, over relevant background factors, bereavement-related psychopathology, and separation distress. In the final model, the standardized regression coefficients for the PGS were 2-15 times larger than for the other competing measures in explaining each of the three outcomes.

Conclusions: The findings underscore the clinical utility of this short and easy-to-use measure in identifying risk of deleterious outcomes across a range of functional and behavioral domains.

Keywords: Coronavirus, COVID-19; Grief; Incremental Validity; Functional impairment; Pandemic

Highlights: The Pandemic Grief Scale is a short, easy-to-use, and clinically relevant screener that might enable palliative settings to identify mourners at risk of functional impairment, meaning-making difficulties, and substance use coping.

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Over 2.4 million people around the world have died from COVID-19.[1] Every death during this pandemic affects approximately 9 people.[2] The unique circumstances associated with the COVID-19 pandemic, such as physical isolation from terminally ill family members and sources of support, restricted mourning and funeral practices, and economic hardships, underscore predictions that a greater number of people bereaved by this disease will experience preoccupying and protracted grief following the loss.[3-6] Recent research has shown that acute grief during the pandemic is more severe compared to acute grief from deaths before the pandemic.[7] Further, grief following a COVID-19 death is indeed more severe than grief following death from other natural causes.[8] In a study of 307 people bereaved from COVID-19, almost two-thirds (63.2%) report clinically significant functional impairment.[9] Clearly, the unique needs of mourners during the pandemic pose a substantial challenge to palliative care.[6,9]

The Pandemic Grief Scale (PGS) is a short screener designed to identify probable cases of dysfunctional grief due to a COVID-19 loss.[10] It was developed in a large sample (*N*=831) of adults in the United States who had a close person die from COVID-19 and was shown to measure a unified COVID-19 grief construct, was internally consistent (α=0.86) and factorially invariant across gender, age, and race. The PGS also has solid diagnostic properties (e.g. sensitivity=87%, specificity=71%, and area under the curve [AUC]=.87)[10] that are comparable or superior to other psychiatric screeners.[11-13]

The purpose of this study is to examine the incremental validity of the PGS by following established approaches.[14,15] To demonstrate incremental validity, the PGS should uniquely associate with multiple independent indicators of functioning (social/work impairments, difficulty making meaning of the loss, and substance use coping) above and beyond relevant participant characteristics (sociodemographics, loss-related factors, COVID-19 diagnosis), bereavement-related psychopathology (i.e. generalized anxiety, depression, and post-traumatic stress), and separation distress symptoms (i.e. yearning, sorrow, preoccupation with deceased, and preoccupation with the death). Separation distress represents a core characteristic of disturbed grief.[16]

Materials and Methods

Participants and Procedure

Ethics approval was granted by the Christopher Newport University Institutional Review Board. Online survey data from 1065 U.S. adults were collected in November 2020, yielding more than sufficient statistical power. Participants were recruited through Amazon MTurk in exchange for payment (USD $0.50) and were eligible if they

experienced the death of a close person from COVID-19. MTurk provides data equivalent in quality to other methods of data collection, especially when data are screened appropriately.[17] Only participants who furnished complete information were included in the final sample and all provided informed consent.

Measures

Bereavement-related psychopathology. Clinical symptoms of depression and generalized anxiety were measured using the Patient Health Questionnaire-4.[18] Posttraumatic stress symptoms were measured using the National Stressful Events Survey PTSD Short Scale.[19] Participants indicated how frequently they experienced symptoms of depression with two items (e.g. "feeling down, depressed, or hopeless"; α=0.74), generalized anxiety with two items (e.g. "feeling nervous, anxious, or on edge"; α=0.72), and posttraumatic stress with nine items (e.g. "feeling jumpy or easily startled when you hear an unexpected noise?"; α=0.92).

Separation distress. Separation distress symptoms of grief were measured with the first four items (e.g. "I felt a constant longing or yearning for the deceased"; α=0.81) of the Persistent Complex Bereavement Inventory, which has established strong reliability as well as factorial and construct validity in previous research.[20,21]

COVID-19 grief. COVID-19 grief was measured with the 5-item Pandemic Grief Scale (PGS; e.g. "I wished to die in order to be with the deceased"; α=0.89), an efficient screening tool that identifies dysfunctional grief due to a COVID-19 loss with strong reliability as well as factorial and construct validity.[10]

Indicators of functioning. Functional impairment due to the loss was measured using the Work and Social Adjustment Scale.[22] Participants were asked to rate how much impairment they experienced because of their COVID-19 loss with 5 items (e.g. "Because of this loss, my ability to work is impaired"; α=0.94). Difficulty making meaning of the loss was measured using the six items (e.g. "This loss is incomprehensible to me"; α=0.89) of the Integration of Stressful Life Experiences Scale-Short Form.[23] Substance use coping was measured by a single-item scale, "I used alcohol or other drugs to help me get through this loss."

A 4-point time-anchored score (0=*not at all* to 3=*nearly every day*) that spanned the previous two weeks was applied to all of the measures except for the Work and Social Adjustment Scale,[22] which used a 9-point severity scale (0=*not at all* to 8=*very severely*) and the Integration of Life Experiences Scale-Short Form,[23] which used a 5-point scale of agreement. Item scores within a measure were summed to form composite scores, with higher scores indicating higher levels of each construct.

Sociodemographic information. Participants were asked to report their age, gender, race, COVID-19

diagnosis, relationship to a significant person in their life who died from COVID-19, how long ago this person died, and whether the participant received professional help for this loss.

Statistical Analyses

Descriptive statistics were used to characterize the sample. Independent *t*-tests and analyses of variance (ANOVA) were planned to determine differences in COVID-19 grief according to sociodemographic characteristics. However, due to violations of the assumption of homogeneity of variance in the relevant variables, Welch's *t*-tests were used in place of the planned *t*-tests. Pearson correlations were used to explore associations between measures. Three separate hierarchical multiple regression models were tested to detect the proportion of unique variance associated with COVID-19 grief for each model (i.e. functional impairment due to the loss, difficulty making meaning of the loss, and use of alcohol or drugs to cope with the loss). An initial screening of the data revealed no problems associated with singularity, multicollinearity, dependence of errors, violation of normality, linearity, or homoscedasticity of residuals. Based on the preliminary analyses, the following background and deceased-related variables were dummy coded and used as control variables in the first block: race (1=White; 0=non-White), gender (1=men; 0=women and other); diagnosis (1=COVID-19 diagnosis; 0=no COVID-19), relation (1=immediate family and romantic relation; 0=other), and help (1=received professional help for loss; 0=no help). The second block added the differential diagnostic variables of generalized anxiety, depression, and posttraumatic stress to the model. The third block added separation distress to the model. The last block added COVID-19 grief to the model.

Results

Approximately three quarters of the participants (M_{age}=39.44) were White (76.4%), slightly more than half were male (56.3%), and over one-third had themselves been diagnosed with COVID-19 (34.9%). Most were within 3 months of bereavement (76.8%), and nearly 4 in 10 sought professional help for their loss (38.3%; see Table 1). Overall, the sample was generally composed of individuals who were distressed and having difficulties adjusting to their loss (see Table 2). Specifically, the total score means for anxiety, depression, COVID-19 grief, and functional impairment were just below clinically significant levels of distress.[10,18,21] Fully 56.6% of the sample scored above the cut score of ≥ 7 on the PGS for clinically dysfunctional pandemic grief established by previous research[10] and 69.7% of the sample coped with their loss using drugs or alcohol for at least several days in past two weeks.

COVID-19 grief was higher among men, $t(962.46)=3.08$, $p < .001$, and those who were diagnosed with COVID-19, $t(905.64)=14.38$, $p < .001$, as well as those who sought professional help with their loss,

$t(1002.71)=15.36$, $p < .001$, and lost either an immediate family member or romantic partner, $F(4, 1050)=54.83$, $p < .001$. Notably, time since loss and age were not associated with COVID-19 grief. Only one race difference was found such that Whites reported slightly higher COVID-19 grief than non-Black minorities, $F(2, 1062)=4.04$, $p=.02$. All the psychological measures and substance use coping were positively intercorrelated (Table 2).

Table 3 displays the results of the final hierarchical multiple regression models, one each for functional impairment, meaning-making difficulties, and substance use coping. COVID-19 grief accounted for 4-5% of unique variance in the models (see change in adjusted R^2). The standardized regression coefficients for COVID-19 grief are 2-15 times larger in magnitude than the competing variables we tested. These coefficients show that, after controlling for all other variables, a 1 standard deviation increase in COVID-19 grief will result in a .45 standard deviation increase in functional impairment, a .43 standard deviation increase in meaning-making difficulties, and a .41 standard deviation increase in substance use coping.

Discussion

The most notable finding in this study is that the PGS uniquely explained work and social difficulties attributed to a COVID-19 loss above and beyond relevant background data (e.g. COVID-19 diagnosis, relation to the deceased, help-seeking), bereavement-related psychopathology (post-traumatic stress, depression, and anxiety), and general grief reactions (i.e. separation distress). This finding is significant because it demonstrates that the PGS meets basic[15] and grief-specific[14] criteria for incremental validity and instrument validation.[24] The finding that the PGS further explained substance use coping in a similar magnitude as functional impairment is equally noteworthy. Given that the pandemic has led to a higher than usual number of overdoses,[25] this study's results underscore the need to screen widely to identify those who suffer from problematic levels of grief who appear susceptible to substance-related misuse, addiction, and death. The fact that the PGS uniquely explained a substantially larger magnitude of each of the three major outcomes than the other competing measures in the final regression models underscores its practical relevance in identifying risk of deleterious outcomes across a range of functional and behavioral domains.

Beyond the identification of these common clinical outcomes, PGS scores were also associated with a struggle for meaning in the context of loss, an important outcome identified in research on bereavement.[26] Both contemporaneous and longitudinal research have documented difficulties in making sense of a loss as a major risk factor for intense and prolonged courses of bereavement.[27] The link between disrupted meaning making and

pandemic grief evidenced in this study reinforces concerns that their conjunction could forecast the long-term debilitation associated with prolonged grief disorder, a distinctive form of pathological grief recognized by both the World Health Organization[28] and the American Psychiatric Association.[29] This prospect clearly deserves research in future longitudinal studies.

Palliative care is often challenged by questions concerning when and what bereavement support to provide, to whom, and on what basis.[30,31] A recent editorial called for improvements in supporting the bereaved in greatest need, including improved screening efforts.[32] The length and complexity of existing grief measures means that they are unlikely to be feasible for use in palliative settings,[33,34] particularly during a pandemic. The results of this study show that the PGS has unique value in mental health screening to identify several maladaptive outcomes of COVID-19 bereavement, namely functional impairment, meaning-making difficulties, and substance use coping. Responding to the mental health effects of the pandemic adds a substantial challenge to already overburdened services[35]. Thus, the PGS is likely to help palliative services make ethical and cost-effective decisions about resource allocation, especially where resources are already stretched.

Additionally, the surge of post-pandemic grief worldwide will have the greatest impact in communities under-resourced to start with,[36] leading to well organized advocacy for a White House Office of Bereavement Care in the Unit States to address the grief of these and all communities (https://live-evermore.org/). However, this call for universal bereavement support and selective availability of specialized grief therapy when indicated implies a global need for greater professional training in grief assessment and intervention, as advocated and provided by leading organizations in end-of-life and bereavement care worldwide (e.g. Hospice Foundation of America, National Hospice and Palliative Care Organization, Australian Centre for Grief and Bereavement, Portland Institute for Loss and Transition, National Bereavement Partnership and Cruse Bereavement Care in the United Kingdom, Fundacion Hospital in Spain, Quatro Estaçoes in Brazil, and others). Likewise, there are efforts underway to curate a comprehensive index of internet resources of all kinds for the bereaved themselves (Wortman, C. B., personal communication, 15 March 2021). The emerging application of implementation science to bereavement care[37] will be especially fruitful in improving the lives of bereaved people beyond the pandemic.

Notably, neither the PGS or other screeners used in this study to assess depressive, anxious, or posttraumatic symptomatology, correlated even modestly with time across the six or more months of bereavement assessed in this research. This is striking, as a comprehensive meta-analysis of bereavement outcomes has

documented the normative trend for symptomatology to decline as a function of time since loss.[38] The fact that no such trend was observed for over 1000 adults bereaved by COVID-19 in the current study is therefore all the more alarming. This is especially the case in light of the finding that over half of the present sample scored in the clinically dysfunctional range of the PGS, raising the specter of prolonged and preoccupying grief for the majority of those losing loved ones to COVID-19 unless adequately treated. The related finding that the two highest correlations of the PGS were with posttraumatic stress on the one hand and separation distress on the other is compatible with a conceptualization of COVID-19 grief as a traumatic form of grief.[5]

Conclusions

The results of this study support the utility of the PGS as a short, easy-to-use, and clinically relevant screener that could enable palliative settings to identify mourners at risk of functional impairment, meaning-making difficulties, and substance use coping. However, the results of this study are qualified by two limitations. First, we relied on a convenience sample and online self-report measures. Although this is common in bereavement research, replication of this study using random sampling and in-depth clinical interviews of the participants should yield more representative and detailed results. Given that MTurk samples tend to report significantly lower mean scores on measures of post-traumatic stress, depression, and generalized anxiety symptoms than undergraduate, community, and treatment-seeking samples,[39] our estimates might be conservative. Second, because we used a cross-sectional design in our study, we could not determine the causal relationships between the variables. Therefore, a replication and extension of this study using a longitudinal design would be desirable to emphasize COVID-19 grief as a unique syndrome specific to the current pandemic, and likely to be relevant to similar pandemics yet to come.

Authorship confirmation statement: S.A.L and R.A.N. conceived the study. S.A.L. analyzed the data. S.A.L. and L.J.B. drafted the initial manuscript. All authors contributed to data interpretation, writing, and critically reviewing the manuscript, and approved the final article. All agree to be accounted for all aspects of the study.

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Table 1. *Sample characteristics (N=1065)*

Characteristics	*n* (%)
Gender	
Male	600 (56.3%)
Female	463 (43.5%)
Other	2 (0.2%)
Race	
White	814 (76.4%)
Black	118 (11.1%)
Asian	74 (6.9%)
Hispanic	49 (4.6)
Other	10 (0.9%)
COVID-19 Diagnosis	
No	693 (65.1%)
Yes	372 (34.9%)
Relationship to the Deceased	
Extended Family	333 (31.3%)
Close Friend	217 (20.4%)
Immediate Family	209 (19.6%)
Acquaintance	187 (17.6%)
Other	10 (0.9%)
Time since Loss in Months	
Less than 1	99 (9.3%)
1 Month	219 (20.6%)
2 Months	289 (27.1%)
3 Months	211 (19.8%)
4 Months	122 (11.5%)
5 Months	81 (7.6%)
6 or more Months	44 (4.1%)
Professional Help for Loss	
No	657 (61.7%)
Yes	408 (38.3%)
	Mean (SD)
Age	39.44 (11.75)

Table 2. *Zero-Order Correlations and Descriptive Statistics for Modelled Variables (N=1065)*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Age	--														
2. Race	0.21***	--													
3. Gender	-0.05	-0.08*	--												
4. Diagnosis	-0.05	-0.02	0.07*	--											
5. Time	0.03	-0.01	0.04	-0.06	--										
6. Relation	0.07*	0.05	0.02	0.35***	-0.03	--									
7. Help	0.01	0.05	0.00	0.36***	0.04	0.25***	--								
8. Depression	-0.03	0.05	0.03	0.32***	0.02	0.27***	0.29***	--							
9. Generalized anxiety	-0.02	0.08*	-0.03	0.30***	-0.01	0.24***	0.27***	0.70***	--						
10. Post-traumatic stress	0.00	0.06*	0.05	0.39***	0.03	0.36***	0.38***	0.77***	0.74***	--					
11. Separation distress	0.06	0.04	0.02	0.29***	-0.01	0.34***	0.31***	0.54***	0.52***	0.70***	--				
12. COVID-19 grief	0.01	0.05	0.10**	0.38***	0.04	0.39***	0.41***	0.61***	0.56***	0.79***	0.76***	--			
13. Functional impairment	0.04	0.06*	0.09**	0.36***	0.04	0.37***	0.40***	0.64***	0.61***	0.80***	0.75***	0.85***	--		
14. Meaning-making difficulties	0.03	0.09**	0.05	0.35***	0.00	0.32***	0.38***	0.58***	0.58***	0.72***	0.70***	0.78***	0.81***	--	
15. Substance use coping	0.03	0.04	0.11***	0.38***	0.01	0.36***	0.35***	0.52***	0.48***	0.66***	0.62***	0.72***	0.69***	0.63***	--
M	39.44	0.76	0.56	0.35	3.43	0.30	0.38	2.95	2.93	12.74	6.14	6.45	19.64	19.36	1.29
SD	11.75	0.42	0.50	0.48	1.55	0.46	0.49	1.73	1.64	6.75	2.82	4.23	11.21	5.84	1.05

Note. Race (1=white; 0=non-white); Gender (1=men; 0=women and other); Diagnosis (1=COVID-19 diagnosis; 0=no COVID-19); Time=time since loss in months; Relationship (1=immediate family and romantic relation; 0=other); Help (1=received professional help for loss; 0=no help).
* $p < .05$. ** $p < .01$. *** $p < .001$.

Table 3. *Final Model Summary Explaining Functional Impairment, Meaning-making Difficulties, and Substance Use Coping (N=1065)*

Variables	*Functional Impairment*	*Meaning-making difficulties*	*Substance use coping*
Race	.01	.04*	.00
Gender	.03*	.00	.05*
Diagnosis	-.01	.03	.08**
Relation	.02	-.02	.05*
Help	.05*	.06**	.03
Depression	.04	.04	.02
Generalized anxiety	.06*	.11*	.01
Post-traumatic stress	.22***	.09*	.16**
Separation distress	.18***	.21***	.12***
COVID-19 grief	.45***	.43***	.41***
adjusted R^2	.78	.66	.55
Change in *adjusted* R^2	.05	.05	.04
Significant *F* change	$p < .001$	$p < .001$	$p < .001$

Note. Values reflect standardized regression coefficients. Changes in R^2 and *F* values reflect the addition of pandemic grief in the final blocks of the models. Race (1=white; 0=non-white); Gender (1=men; 0=women and other); Diagnosis (1=COVID-19 diagnosis; 0=no COVID-19); Relation (1=immediate family and romantic relation; 0=other); Help (1=received professional help for loss; 0=no help).
*$p < .05$. **$p < .01$. ***$p < .001$.