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## RESEARCH ARTICLE

# The International Grief Questionnaire (IGQ): A new measure of *ICD-11* prolonged grief disorder

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## Abstract

Prolonged grief disorder (PGD) is included in the 11th version of the *International Statistical Classification of Diseases and Related Health Problems (ICD-11)*. This study sought to test the validity and reliability of a new brief measure to screen for *ICD-11* PGD—the International Grief Questionnaire (IGQ). The psychometric properties of the IGQ were tested using data collected from two bereaved samples of adults from the United Kingdom ( $n = 1,012$ ) and Ireland ( $n = 1,011$ ). Confirmatory factor analysis demonstrated that a correlated two-factor model best captured the latent dimensionality of the IGQ in both samples. Estimates of internal reliability were high, whereas the convergent and concurrent validity of the scale were supported through strong associations with external measures. Measurement invariance and differential item functioning testing showed no statistically significant difference in the latent structure of the IGQ nor the functioning of the IGQ items by age, sex, and nationality. For participants who were bereaved for more than 6 months, the rates of probable PGD derived from the IGQ were 10.9% and 15.3% for the Irish and U.K. samples, respectively. The IGQ is a brief, easy-to-use, self-report screening measure that captures all diagnostic criteria of PGD set forth in the *ICD-11*. Findings from this study provide initial support for the validity, measurement invariance, and reliability of the IGQ among two national samples.

Epidemiological studies indicate that most adults (~60%–80%) have experienced the death of a loved one (Killikelly et al., 2021; Shevlin, Redican, Hyland, et al., 2023). In the immediate aftermath of bereavement, intense feelings of sadness and anger, as well as ruminative thoughts about the deceased, are typical. These grief responses are universal and are considered normal psychological reactions to the loss of a loved one (Bonanno et al., 2008). Prospective longitudinal studies show that most bereaved people recover relatively quickly;

however, a small minority (10%–20%) experience chronic psychological distress in the form of grief-related mental health problems, depression, or posttraumatic stress (e.g., Bonanno & Malgaroli, 2020; Lenferink et al., 2020). To understand the extent of this problem, identify individuals who require care, and develop treatments, a formal psychiatric description, or diagnosis, of pathological grief is required.

Efforts to formulate such a diagnosis have evolved over the last two decades (see Prigerson et al., 2021, for a

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review). Prigerson, Frank, et al. (1995) introduced the concept of “complicated grief,” and Shear et al. (2011) later proposed diagnostic criteria. Prigerson et al. (2009) subsequently formulated a diagnostic entity termed “prolonged grief disorder” (PGD), and this was included in the draft proposals of the 11th version of the *International Statistical Classification of Diseases and Related Health Problems (ICD-II* [World Health Organization (WHO), 2018]; Maercker et al., 2013). At the same time, “persistent complex bereavement disorder” was included as a condition for further study in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM-5*; American Psychiatric Association [APA], 2013). Following much research, PGD was included as a specific disorder in both the *ICD-II* (WHO, 2018) and the *DSM-5* text revision (*DSM-5-TR*; APA, 2022). In both classification systems, PGD is included in the chapter pertaining to trauma- and stressor-related disorders due to prior exposure to an external stressful event (i.e., the loss of a loved one) being a gateway criterion for diagnosis (APA, 2022; WHO, 2018).

The formulation of PGD in the two classification systems is similar, although some minor differences exist. In the *ICD-II*, PGD is defined by two “core” symptoms involving persistent and pervasive longing or yearning for the deceased and a preoccupation with the deceased. These core symptoms must be accompanied by associated cognitive and emotional difficulties, and examples are provided, including sadness, guilt, anger, and difficulty accepting the death. Additionally, these problems must persist for at least 6 months after the bereavement, or longer than would be expected based on cultural norms, and cause significant impairment in functioning. In the *DSM-5-TR*, PGD is also defined by two core symptoms of longing or yearning for and a preoccupation with the deceased, and a specific list of associated emotional problems is provided; two notable differences from the *ICD-II* criteria are the inclusion of feelings of loneliness as well as the requirement of three associated emotional problems. The *DSM-5-TR* criteria require that these problems cause significant impairment in daily life and be present for at least 12 months after bereavement. A 12-month bereavement timeframe was included in the *DSM-5-TR* to alleviate concerns regarding the potential pathologizing of normal grieving (Prigerson et al., 2021), whereas the 6-month bereavement timeframe in the *ICD-II* has been supported by research demonstrating that individuals with severe grief symptoms 6 months postloss are likely to experience enduring grief symptoms (Reed et al., 2022). There is currently no scientifically verified cutoff point for discerning PGD from typical grieving (Killikelly & Maercker, 2017), and, hence, further research is necessary to determine the optimal cutoff point for a diagnosis.

The earliest PGD measure developed is the 19-item Inventory of Complicated Grief (ICG; Prigerson, Maciejewski, et al., 1995), which was subsequently revised to fit with the developing descriptions of PGD in the *ICD-II* (e.g., Killikelly et al., 2020; Prigerson et al., 2009). Boelen and Smid (2017) developed the Traumatic Grief Inventory Self-Report (TGI-SR), which is an 18-item measure intended to capture all symptoms relevant to the then-provisional diagnoses of PGD for the *ICD-II* and persistent complex bereavement disorder for the *DSM-5*. Most of the items in the TGI-SR were taken from the ICG and its revisions. More recently and following the finalization of PGD in the *ICD-II* and *DSM-5-TR*, a revised and updated version of the TGI-SR, the TGI-SR+, was developed (Lenferink et al., 2022). Another measure of *ICD-II* PGD symptoms is the International Prolonged Grief Disorder Scale (IPGDS; Killikelly et al., 2020), which includes 14 items designed to measure the core and associated grief symptoms. As with the TGI-SR+, these items were largely derived from the ICG and its revisions.

We propose a new brief screening measure that has some important features for the assessment of PGD. First, the *ICD-II* states that PGD is “characterized by longing for the deceased or persistent preoccupation with the deceased,” delineating these as the principal symptoms of the disorder; there is also a requirement that these problems are “accompanied by intense emotional pain.” Taken together, this implies that interindividual differences in the severity of PGD should be primarily due to longing and preoccupation and, to a lesser extent, the associated problems. The TGI-SR+ and IPGDS each contain two items measuring core symptoms and 10 items measuring associated symptoms. If, as suggested for these scales, a total score is calculated to represent PGD severity, then the associated symptoms rather than the core symptoms are likely to contribute more, or even exclusively, to the overall score. Rebalancing the ratio of core to emotional symptoms to ensure greater weight is given to core symptoms would more accurately reflect the *ICD-II* specification of PGD. The serious deleterious effects of an unbalanced ratio of core and associated symptoms were demonstrated in a recent factor analytic study of PGD symptoms in the general population (Shevlin, Redican, Murphy, et al., 2023). Using exploratory structural equation models, the items from the IPGDS were best explained by three factors, but the Loss factor, which represented the core symptoms, was not significantly related to grief-related functional impairment. The Emotional Numbing factor was the only significant predictor of functional impairment, and eight of the 10 associated symptoms loaded on this factor. It is anomalous that the core symptoms, which represent the primary diagnostic requirement for PGD, are less important than the associated symptoms; the narrow

(i.e., two-item) representation of the core symptoms provides insufficient conceptual breadth compared to the 10 items that measure the associated symptoms; hence, the core symptoms lose their predictive power.

Second, existing measures assess the frequency of grief experiences as opposed to their distressing nature. It is important to focus on distress rather than the frequency of these experiences because repeatedly thinking or reminiscing about a deceased loved one can be comforting and adaptive (Field et al., 2013). Moreover, in the *ICD-II*, PGD is in the chapter on “disorders specifically associated with stress” alongside adjustment disorder, posttraumatic stress disorder (PTSD), and complex PTSD (CPTSD). For each of these disorders, the bothersome nature of stress-related experiences is measured, not their frequency. Equally, as a stress-related disorder, PGD-related symptoms should be assessed in relation to the distress they cause to the bereaved person. Furthermore, there is currently no agreed-upon criterion for determining when a PGD symptom should be considered present, and, thus, estimated prevalence rates are highly variable (Killikelly et al., 2020; Lenferink et al., 2022; Shevlin, Redican, Hyland, et al., 2023). Adopting the same assessment criterion for PGD symptoms as is used for all other *ICD-II* stress-related disorders will provide a logical basis for determining the presence of a given symptom and should yield more consistent estimated prevalence rates across studies and estimates of comorbidity. Finally, we propose that a measure of *ICD-II* PGD should have a clear and unequivocal method for scoring severity and identifying probable cases.

This is our goal in developing the International Grief Questionnaire (IGQ). The IGQ was developed to capture the diagnostic criteria described in the *ICD-II* (specific details are provided in the Methods section). Consistent with the objective of the *ICD-II* to maximize the clinical utility of diagnoses by focusing on a small set of core disorder indicators (First et al., 2015), the IGQ includes two items measuring the core symptoms and three items measuring the associated symptoms of PGD. This balance between core and associated symptoms means that total scale scores are appropriately weighted to the defining features of PGD as compared to existing measures of *ICD-II* PGD, which include 5 times more items related to associated symptoms than core symptoms. Furthermore, the IGQ assesses the extent to which each grief-related experience is bothersome and is, therefore, congruent with measures of all other *ICD-II* stress-related disorders.

The primary objective of this study was to assess the psychometric properties of the newly developed IGQ using data from national surveys of bereaved adults in the United Kingdom and Ireland. We assessed the latent structure of IGQ items and hypothesized that a unidimensional model, or a correlated two-factor model reflecting the distinction

between the core and associated PGD symptoms, would fit the sample data well. Furthermore, we hypothesized that these items would have high internal reliability. To further test the psychometric properties of the IGQ, we assessed if the latent structure of the scale was invariant for sex, age, and nationality, and investigated whether there was any evidence of differential item functioning (DIF) based on these variables. Finally, we assessed the convergent validity of IGQ scores by determining their associations with an existing measure of PGD symptoms (i.e., the IPGDS) and the concurrent validity of IGQ scores by determining their associations with symptoms of anxiety, depression, and grief-related PTSD. We hypothesized that we would find evidence to support the validity and reliability of IGQ scores, and, thus, the final study objective was to determine what proportion of people in both national samples met the criteria for a probable diagnosis of *ICD-II* PGD on the IGQ, compare these estimates to those for the IPGDS, and test if there were statistically significant sex and age differences in these proportions.

## METHOD

### Participants and procedure

#### Data collection

Data were collected from two bereaved samples of adults from the United Kingdom ( $N = 1,012$ ) and the Republic of Ireland ( $N = 1,011$ ). These data were collected by the survey company Qualtrics, who recruited participants in each nation from existing, actively managed, double-opt-in research panels via email, short message service (e.g., text message), or in-app notifications. Eligible participants were aged 18 years or older and had experienced a bereavement during their lifetime. Qualtrics only recruited participants who responded “yes” when asked if they had experienced bereavement during their lifetime. Data for the U.K. sample were collected between April 19, 2022, to August 13, 2022, and data for the Irish sample were collected from April 21, 2022, to September 12, 2022. Ethical approval was provided by the research ethics committee at Ulster University. Demographic details for each sample are presented in Supplementary Table S1.

## Materials

### Development of the IGQ

The content of the IGQ and its alignment with the *ICD-II* description of PGD is presented in Table 1. The IGQ can be

**TABLE 1** ICD-II description of prolonged grief disorder and corresponding parts of the International Grief Questionnaire

ICD-II description: Prolonged grief disorder is a disturbance in which...	International Grief Questionnaire
... following the death of a partner, parent, child, or other person close to the bereaved...	During your life have you known anyone who has died who you were very close to (e.g., a partner, parent, child, close friend)? <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>
... there is a persistent and pervasive <sup>a</sup> grief response characterized by longing for the deceased or persistent preoccupation with the deceased...	Item 1: Yearning for the deceased <i>almost every day</i> ? Item 2: Thinking too much about the deceased <i>almost every day</i> ?
... accompanied by intense emotional pain (e.g., sadness, <b>guilt, anger</b> , denial, blame, <b>difficulty accepting the death</b> , feeling one has lost a part of one's self, <b>an inability to experience positive mood, emotional numbness</b> , difficulty in engaging with social or other activities).	Item 3: Feeling <b>guilty</b> or <b>angry</b> about my loss. Item 4: <b>Having trouble accepting the death of my loved one.</b> Item 5: <b>Feeling sad or emotionally numb.</b>
The grief response has persisted for an atypically long period of time following the loss (more than 6 months at a minimum)...	How long ago did this person die? <i>Within the last 6 months</i> <i>6 months to a year ago</i> <i>1–2 years ago</i> <i>2–3 years ago</i> <i>3–5 years ago</i> <i>6–10 years ago</i> <i>More than 10 years ago</i>
... and clearly exceeds expected social, cultural, or religious norms for the individual's culture and context.	Do you consider your grief to be worse (more intense and/or of longer duration) than what would be normally expected in your community or culture? <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> <li>• I don't know</li> </ul>
The disturbance causes significant impairment in personal, family, social, educational, occupational, or other important areas of functioning.	Have these experiences caused problems in personal, family, social, educational, occupational, or other important areas of your life? <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>

Note: ICD-II = International Statistical Classification of Diseases and Related Health Problems (11th ed.).

<sup>a</sup>The persistent and pervasive nature of the grief response is captured by the suffix *almost every day* for the core symptoms.

found in Appendix 1. History of bereavement is assessed by a single question with “yes” or “no” response options, and time since bereavement is assessed using a multi-option response format. The first response option is “less than 6 months ago,” which is exclusionary for potential diagnostic status. Items 1 and 2 measure the core symptoms of yearning and preoccupation and are suffixed with “...almost every day” to capture the persistent and pervasive nature of the grief response. Items 3–5 capture the associated problems.

The diagnostic requirements in the ICD-II state that “intense emotional pain...*may* be manifested by experiences *such as* sadness, guilt, anger, denial, blame, difficulty

accepting the death; feeling one has lost a part of one's self; an inability to experience positive mood; emotional numbness; and difficulty in engaging with social or other activities” (emphasis added). The “may” and “such as” qualifiers indicate that that the list of symptoms is not meant to be complete and exhaustive, only indicative. This interpretation is supported by the difference in the ICD-II description of PTSD symptoms, which states that the disorder “may develop following exposure to an extremely threatening or horrific event or series of events. It is characterized by all of the following:...”. The ICD-II states that PGD requires the endorsement of core symptoms and the presence of intense emotional pain, but it does not



stipulate which or the number of emotional problems that need to exist; thus, to be consistent with the *ICD-II*, there only needs to an indication of one of the emotional pain symptoms.

In deciding how to adequately represent intense emotional pain, the *ICD-II* symptom list was considered a pool of potential symptoms, and three inclusion/exclusion criteria were used. First, we excluded “difficulty in engaging with social or other activities,” as this is largely captured by the functional impairment criterion. Second, we assessed the sadness (Item 5), guilt (Item 3), anger (Item 3), difficulty accepting the death (Item 4), and emotional numbness (Item 5) in the three accessory questions. Third, there were some symptoms we chose not to include. We did not include blame, as this is multifaceted; it could represent self-blame, other-blame, or blaming the deceased—this was not included in the other measures for exactly this reason (see Rosner et al., 2021). “Denial” was considered to be adequately captured by the inclusion of “having trouble accepting the death of my loved one.” The “feeling one has lost a part of one’s self” example was not incorporated into the scale because (a) under the *DSM-5* system, this is only part of a broader problem relating to “identity disruption”; (b) this item was almost entirely unrelated to the two emotion-related factors in recent factor analytic research on PGD symptoms (Shevlin, Redican, Murphy, et al., 2023); and (c) it could not be formulated into an item as simply and cogently as the others.

Respondents are asked to indicate how bothered they have been by each symptom in the last week, scoring responses on a 5-point Likert scale with response options 0 (*not at all*), 1 (*a little bit*), 2 (*moderately*), 3 (*quite a bit*), and 4 (*extremely*). Symptom presence is indicated by a score of 2 (*moderately*) or higher. The criterion related to symptoms exceeding social, cultural, or religious norms is assessed by a single question, “Do you consider your grief to be worse (more intense and/or of longer duration) than what would be normally expected in your community or culture?” Three response options are provided, including “no,” “yes,” and “I don’t know.” A “no” response is exclusionary for diagnostic purposes. The “I don’t know” response option was included as part of another research project examining the interpretability of the cultural criterion. Finally, functional impairment is assessed by a single question with “yes” or “no” response options.

The IGQ can be used as a screener to measure symptom severity or to identify probable diagnostic status. The severity scoring method involves summing responses to the five questions, producing a possible score ranging from 0 to 20, with higher scores reflecting higher levels of PGD symptoms. The diagnostic criteria for *ICD-II* PGD require (a) bereavement; (b) bereavement that began more than 6 months ago; (c) the presence of at least one core symp-

tom; (d) the presence of at least one associated symptom; (e) a response of “yes” to the question related to exceeding the expected cultural, social, or religious norms; and (f) the presence of functional impairment.

## Measures of convergent and concurrent validity

### *Prolonged grief*

We used the 12-item IPGDS (Killikelly et al., 2020) to assess convergent validity. All items are answered using a 5-point Likert-scale ranging from 0 (*not at all*) to 4 (*always*), and scores can range from 0 to 48, with higher scores reflecting more frequent grief symptoms. Probable PGD is identified by either the “strict” scoring algorithm, which requires the endorsement of at least one of the core symptom items and at least one of the accessory symptom items with a score of 3 (*often*) or 4 (*always*), or the “moderate” scoring algorithm, which requires the items to be rated with a score of 2 (*sometimes*) or higher. The internal reliability of the scale scores in the U.K., Cronbach’s  $\alpha = .94$ , and Irish, Cronbach’s  $\alpha = .92$ , samples was excellent.

### *Anxiety and depression*

Symptoms of anxiety and depression were measured using the eight-item International Anxiety Questionnaire and the nine-item International Depression Questionnaire, respectively (Shevlin, Hyland, et al., 2023). These scales measure generalized anxiety and depressive symptoms in accordance with the *ICD-II* descriptions of single-episode depressive disorder and generalized anxiety disorder. Respondents are asked to indicate how often they have experienced each problem over the last several months for anxiety and the last 2 weeks for depression, scoring responses on a 5-point Likert scale ranging from 0 (*never*) to 4 (*every day*). Anxiety scores range from 0 to 32, and depressive symptom scores range from 0 to 36; in both cases, higher scores indicate higher symptom levels. The anxiety scale demonstrated excellent internal reliability in the U.K., Cronbach’s  $\alpha = .95$ , and Irish, Cronbach’s  $\alpha = .95$ , samples, as did the depression scale, U.K. sample: Cronbach’s  $\alpha = .96$ , Irish sample: Cronbach’s  $\alpha = .95$ .

### *Posttraumatic stress symptoms*

Symptoms of grief-related PTSD were measured using the International Trauma Questionnaire (ITQ; Cloitre et al., 2018). The ITQ includes six items measuring all symptoms of *ICD-II* PTSD. Participants were instructed to complete the ITQ thinking about their bereavement experience. Respondents indicate how bothered they have been by each PTSD symptom over the past month using the same 5-point Likert scale as described for the IGQ (i.e., 0 = “not at all” to 4 = “extremely”). Scores range from 0 to 24, with

higher scores reflecting higher PTSD symptom levels. The internal reliability of the PTSD scale scores was excellent in both the U.K., Cronbach's  $\alpha = .93$ , and Irish samples, Cronbach's  $\alpha = .92$ .

## Data analysis

Descriptive statistics were first calculated for the individual items and the IGQ total score, and differences across the two national samples were examined using independent samples *t* tests. Cohen's *d* (Cohen, 1988) values were used to quantify the magnitude of effects (i.e., 0.2 = small effects, 0.5 = moderate effects, and .80 = large effects).

Confirmatory factor analysis (CFA) was used to test the latent structure of the IGQ in the U.K. and Irish samples separately. Two models were tested: a one-factor model where all items loaded onto a single Prolonged Grief latent variable, and a correlated two-factor model where Items 1 and 2 loaded onto a Core Symptoms latent variable and Items 3–5 loaded onto an Associated Symptoms latent variable. The data from both countries were then combined, and tests of configural and metric invariance were conducted: The former tests that the latent structure is consistent across the groups, and the latter assesses the equality of factor loadings across the groups. A MIMIC model approach was used to test for invariance across country, age, and sex. All analyses were conducted in Mplus (Version 8.4; Muthén & Muthén, 1998–2017), and all models were estimated using robust maximum likelihood estimation (MLR; Yuan & Bentler, 2000). See Supplementary Materials for details.

The internal reliability of IGQ scale scores was assessed using omega reliability ( $\omega$ ), and convergent and concurrent validity were assessed using Pearson product–moment correlation coefficients. Finally, differences in the estimated prevalence rates of probable *ICD-11* PGD by nationality, sex, and age were assessed using Pearson chi-square tests.

## RESULTS

### IGQ item and total means

The descriptive statistics for item-level and total IGQ scores in the U.K. and Irish samples are presented in Table 2. Item and total score distributions in both samples were positively skewed. All item means were significantly higher in the U.K. sample than the Irish sample,  $p < .001$ . Additionally, the total IGQ mean score was significantly higher in the U.K. sample than the Irish sample,  $t(2005.30) = 4.86$ ,  $p < .001$ , and the size of the difference was large.

TABLE 2 Means for International Grief Questionnaire (IGQ) items in the United Kingdom and Ireland samples

Item	Item score		Item endorsement count				Item-total correlations <sup>a</sup>		
	Ireland		Ireland		U.K.		U.K.		
	<i>M</i>	<i>SD</i>	<i>d</i>	<i>n</i>	%	<i>n</i>	%	$\chi^2(1, N = 2023)$	Ireland
1	1.31	1.26	1.22	316	31.3	408	40.3	18.06***	.89
2	1.23	1.28	1.21	281	27.8	383	37.8	23.17***	.91
3	1.13	1.27	1.23	253	25.0	350	34.6	22.09***	.90
4	1.25	1.32	1.29	298	29.5	377	37.3	13.75***	.91
5	1.39	1.31	1.27	315	31.2	410	40.5	19.26***	.91
Total	6.30	5.83	1.27						
FI				231	22.8	279	27.6	5.98*	
CC				384	38.0	422	41.7	2.92	

Note: FI = functional impairment; CC = cultural criterion.

<sup>a</sup>All item-total correlations were significant at  $p < .001$ .

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

**TABLE 3** Fit statistics and tests of invariance

Model	$\chi^2$	<i>N</i>	<i>df</i>	<i>p</i>	CFI	TLI	RMSEA	90% CI	SRMR	BIC
U.K. sample										
1-factor model	53.650	1,012	5	< .001	.976	.953	.098	[.075, .123]	.018	12,389.164
2-factor model	3.322	1,012	4	.505	1.000	1.000	.007	[.000, .049]	.005	12,292.283
Ireland sample										
1-factor model	44.299*	1,011	5	< .001	.978	.957	.088	[.065, .113]	.019	12,219.817
2-factor model	3.322*	1,011	4	.505	1.000	1.000	.000	[.000, .044]	.005	12,133.935
Invariance tests										
2-factor configural	7.509*	2,023	8	.483	1.000	1.000	.000	[.000, .035]	.005	24,448.399
2-factor metric	13.069*	2,023	11	.289	.999	.999	0.014	[.072, .037]	.013	24,433.565
Difference					.001		.014	.008		

Note: *df* = degrees of freedom; CFI = comparative fit index; TLI = Tucker–Lewis index; RMSEA = root mean square error of approximation; CI = confidence interval; SRMR = standardized root mean square residual; BIC = Bayesian information criterion.

**TABLE 4** Factor loadings for the two-factor model of the International Grief Questionnaire (IGQ) in the U.K. and Ireland samples

IGQ item	U.K.		Ireland	
	Factor 1	Factor 2	Factor 1	Factor 2
1. Yearning for the deceased almost every day.	.89		.88	
2. Thinking too much about the deceased almost every day.	.92		.91	
3. Feeling guilty or angry about my loss.		.89		.84
4. Having trouble accepting the death of my loved one.		.91		.91
5. Feeling sad or emotionally numb.		.89		.86
Factor correlations	.93		.92	

Note: All factor loadings and factor correlation are statistically significant at *p* < .001.

### Model fit and invariance

The CFA model fit results are presented in Table 3. The one- and two-factor IGQ models fit the data well in each sample; however, the correlated two-factor model provided an extremely close fit and had a lower Bayesian information criterion (BIC) value. Thus, the correlated two-factor model was deemed to be the optimal representation of the latent structure of the IGQ in the U.K. and Irish samples. The configural model possessed adequate fit, supporting the assumption that the same measurement model was present across the samples. The assumption of metric invariance was also supported; the metric model fitted the data well, and the differences between the comparative fit index (CFI), root mean square error of approximation (RMSEA), and standardized root mean residual (SRMR),  $\Delta$ CFI = .001,  $\Delta$ RMSEA = .014,  $\Delta$ SRMR = .008, for the configural and metric models were very small, indicating a negligible deterioration in fit for the additional restrictions.

As shown in Table 4 the standardized factor loadings for each latent variable were positive, high, and statistically significant, *p* < .001, in both samples. The correlation between the Core Symptoms latent variable and the Associated Symptoms latent variable was high in the U.K., *r* = .93, and Irish samples, *r* = .92.

The internal reliability of the IGQ items was excellent in both the U.K. sample, core symptoms:  $\omega$  = .90, associated symptoms  $\omega$  = .92, and the Irish sample, core symptoms  $\omega$  = .89, associated symptoms  $\omega$  = .90.

### DIF analysis

Using the combined U.K. and Ireland data, the predictor variables country, sex, and age were added to the CFA model. Age was a statistically significant predictor of the latent variables representing core symptoms,  $\beta$  = -.21, *p* < .001, and associated symptoms,  $\beta$  = -.27, *p* < .001. Country was also a statistically significant predictor, with participants from the U.K. scoring higher on the latent variables representing core symptoms,  $\beta$  = .23, *p* < .001, and associated symptoms,  $\beta$  = -.21, *p* < .001, than those from Ireland. There were no statistically significant effects for sex on the latent variables representing core symptoms,  $\beta$  = .05, *p* = .275, and associated symptoms,  $\beta$  = -.01, *p* = .759. Overall, these predictors explained 5.9% of the variance in the Core Symptoms latent variable and 8.2% of the variance in the Associated Symptoms latent variable. No modification indices (MIs) or standardised expected parameter change (SEPC) indices met the criteria for adding a direct



**TABLE 5** Bivariate correlations for International Grief Questionnaire (IGQ) total and subscale scores

Variable	IPGDS Grief	Depression	Anxiety	PTSD
U.K. sample				
Total IGQ score	.81	.71	.62	.77
Core symptoms	.75	.65	.57	.70
Associated symptoms	.79	.71	.62	.76
Ireland sample				
Total IGQ score	.81	.59	.52	.69
Core symptoms	.74	.52	.45	.61
Associated symptoms	.79	.60	.53	.70

Note: All associations are statistically significant at  $p < .001$ . IPGDS = International Prolonged Grief Disorder Scale; PTSD = posttraumatic stress disorder.

effect, indicating no differential functioning in the IGQ items according to country, sex, or age.

### Convergent and concurrent validity

The correlations between IGQ scores and all criterion measures are presented in Table 5. The total IGQ Grief subscale scores were positively and strongly correlated with IPGDS grief scores in the U.K.,  $r = .81$ ,  $p < .001$ , and Irish samples,  $r = .81$ ,  $p < .001$ . The IGQ Core Symptoms and Associated Symptoms subscale scores were similarly correlated with IPGDS scores. Additionally, IGQ total and subscale scores were positively and significantly ( $p < .001$ ) correlated with anxiety, depression, and posttraumatic stress symptoms in both samples,  $ps < .001$ .

### Prevalence estimates of ICD-II PGD

In total, 10.9%, 95% CI [9.0%, 12.9%] of participants in the Irish sample who were bereaved more than 6 months met the diagnostic criteria for probable ICD-II PGD, and 15.3%, 95% CI [13.0%, 17.6%], of those in the U.K. sample met the criteria; this difference was statistically significant,  $\chi^2(1, N = 1,917) = 7.97$ ,  $p < .01$ , odds ratio (OR) = 1.47, 95% CI [1.12, 1.92]. There were no statistically significant sex differences in the Irish (women: 12.6% vs. men: 9.2%),  $\chi^2(1, N = 949) = 2.84$ ,  $p = .092$ , OR = 1.48, 95% CI [0.94, 2.16], or U.K. samples (women: 16.3% vs. men: 13.8%),  $\chi^2(1, N = 960) = 1.20$ ,  $p = .273$ , OR = 1.22, 95% CI [0.85, 1.74]. In the Irish sample, the moderate and strict IPGDS scoring algorithms produced probable ICD-II PGD rates of 14.3% and 9.6%, respectively; in the U.K. sample, these rates were 19.4% and 14.4%. There was a strong association between caseness on the IGQ and IPGDS for the strict scoring algorithm in both Ireland,  $\chi^2(1, N = 950) = 307.57$ ,  $p < .001$ , OR = 31.19, 95% CI [18.98, 51.26], and the U.K.,  $\chi^2(1, N = 967) = 303.79$ ,  $p < .001$ , OR = 22.68, 95% CI [14.84, 34.66]; the same was true for the moderate scoring algorithm in both Ireland,  $\chi^2(1, N$

$= 950) = 307.57$ ,  $p < .001$ , OR = 21.86, 95% CI [13.18, 36.28], and the U.K.,  $\chi^2(1, N = 967) = 244.37$ ,  $p < .001$ , OR = 17.26, 95% CI [11.29, 26.38]. Overall, the IGQ produced rates of probable PGD that were lower than the IPGDS using the moderate scoring method and higher than when the strict scoring method was used.

In the Irish sample, the proportion of participants who met the diagnostic criteria for probable ICD-II PGD did not significantly differ across age groups,  $\chi^2(4, N = 950) = 8.49$ ,  $p = .075$ ,  $\phi = .09$ , whereas in the U.K. sample, the proportion of participants who met the diagnostic criteria for probable ICD-II PGD significantly decreased with age,  $\chi^2(4, N = 967) = 40.49$ ,  $p < .001$ ,  $\phi = .23$  (Figure 1).

### DISCUSSION

Using data from national samples of bereaved adults in the United Kingdom and Ireland, the primary objectives of this study were to assess the psychometric properties of the IGQ, a new brief screening measure of ICD-II PGD. Our findings showed that the correlated two-factor model of the IGQ was an excellent representation of the latent structure of the scale in both samples, whereas the one-factor model also provided a good fit to the sample data. These findings align with the extant evidence base using preexisting measures showing that the latent structure of ICD-II PGD symptoms is best reflected by either a one-factor model (e.g., Boelen et al., 2019; Killikelly et al., 2020; Lenferink et al., 2022) or a correlated two-factor model (e.g., Boelen et al., 2018; Vang et al., 2022). For the two-factor model, all IGQ items loaded strongly and significantly onto their respective Core Symptoms or Associated Symptoms latent variable. This shows that the IGQ items are excellent indicators of their respective latent variable, which is a particularly important finding for the latent variable representing associated symptoms, where only a small number of items were selected to capture this symptom cluster. The high correlation between the Core Symptoms and Associated Symptoms latent variables

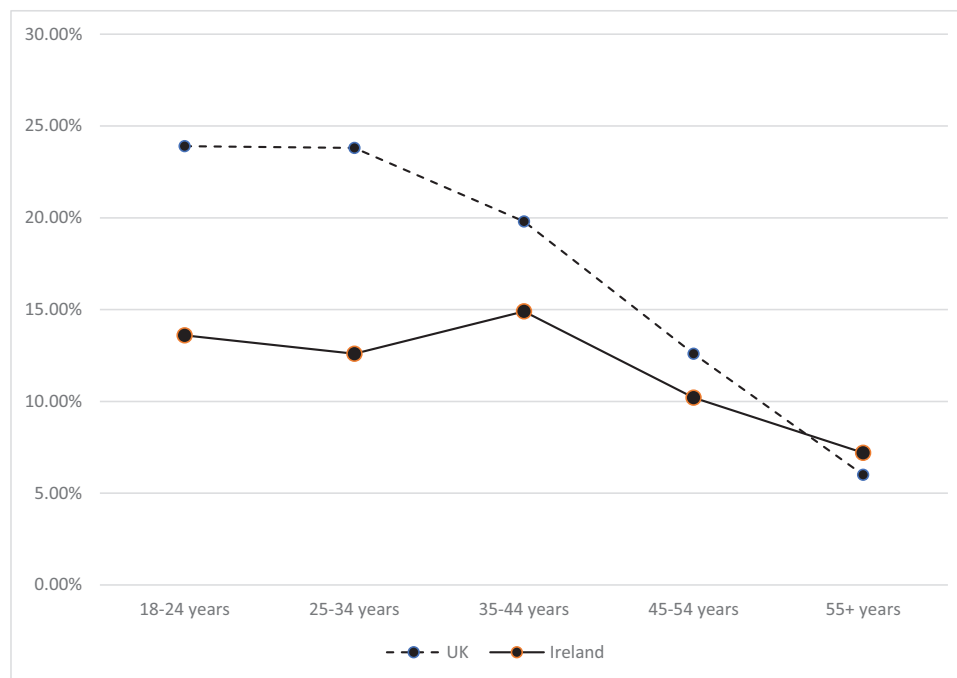


FIGURE 1 Rates of Probable *ICD-II* prolonged grief disorder, by age group, in the U.K. and Ireland samples

was to be expected. We suggest that these findings support the use of the IGQ for identifying cases that meet the diagnostic criteria (i.e., individuals who endorse core and associated symptoms) while also supporting the use of a unidimensional scoring scheme for analytic purposes.

The IGQ demonstrated convergent validity in both samples through strong associations with an existing measure of *ICD-II* PGD symptoms (i.e., the IPGDS), whereas concurrent validity was evidenced through strong associations with symptoms of anxiety, depression, and grief-related PTSD. Notably, convergent and concurrent validity was evidenced whether the IGQ was represented by the one- or two-factor model. These findings are in line with the extant evidence showing high levels of co-occurrence of PGD, anxiety, depression, and grief-related PTSD (Komischke-Konnerup et al., 2021). IGQ scores also demonstrated high levels of internal reliability in both samples.

There were significant differences observed in the latent means for the core and associated symptoms for age and nationality such that older adults had lower latent variable means, and the U.K. sample had higher latent variable means. The lower latent variable means for older adults are understandable given that prior research has identified the unexpectedness of death as a key risk factor of pathological grief responses (Burke & Neimeyer, 2013). Given that older adults experience bereavement at much higher rates than younger adults (Förster et al., 2018), losses are likely to have a lower level of unexpectedness attached to them. The higher latent variable means in the U.K. sample com-

pared to the Irish sample are more difficult to explain, but we speculate that cultural differences with regard to death may be an explanatory factor. For example, in Ireland, it is customary to hold a wake (i.e., social gathering prior to a funeral) during which family, friends, neighbors, work colleagues, and acquaintances can come to pay their respects and support the bereaved. In the United Kingdom, such an event generally takes place after the funeral and is akin to social gatherings that occur following an Irish funeral. Moreover, in Ireland, funerals are typically regarded as communal events, whereas in the United Kingdom, they are often regarded as being private (O'Mahony, 2020). Hence, it may be that there is a greater sense of community within the Irish bereavement culture, with it being widely established that social support plays a key role in determining the ability of the bereaved to adjust to their loss (Burke & Neimeyer, 2013). Additionally, the religious landscape in the United Kingdom is more diverse than that of Ireland. The majority of the Irish population identifies as Catholic (Central Statistics Office, 2018), whereas although Christianity is the most frequently reported religious affiliation in the United Kingdom, significant numbers of people also identify as Muslim and Hindu (Office for National Statistics, 2022). The hypothesis that religious affiliation may have differential associations with *ICD-II* PGD is highly speculative; however, previous research has suggested that religious affiliations may affect a bereaved person's sense of autonomy, social reintegration, personal growth, or participation in social activities and that this may influence the grief response (Becker et al., 2007). Further research

is required to understand the role of cultural and religious factors in the onset and development of PGD symptoms. Nevertheless, despite these differences in latent variable means, the DIF analysis showed that there were no differences in the functioning of the IGQ items by age, sex, or nationality. Therefore, the IGQ can be used to make comparisons based on age, sex, and nationality.

The rates of probable *ICD-II* PGD derived from the IGQ were 10.9% and 15.3% for the Irish and U.K. samples, respectively. These estimates were lower than those produced by the IPGDS moderate scoring method and higher than those based on the strict scoring method. Although these rates, particularly in the U.K. sample, contradict the expectation that PGD affects only a small minority of bereaved individuals (i.e., approximately one in 10 people; e.g., Lunderoff et al., 2017), they should not be considered all that surprising. As previously highlighted, in the *ICD-II*, PGD is included under the diagnostic category of disorders specifically associated with stress alongside other disorders, including PTSD and CPTSD. These disorders have the prerequisite of exposure to an external stressor for diagnosis, and studies investigating the prevalence of *ICD-II* PTSD and CPTSD in trauma-exposed general population samples have reported rates ranging from 5.3% to 26.7% for PTSD and 12.9% to 14.8% for CPTSD (Choi et al., 2021; Karatzias et al., 2019). Thus, the observed probable prevalence estimates of *ICD-II* PGD among bereaved individuals in this study seem to be consistent with other stress-related disorders.

Consistent with prior research (Shevlin, Redican, Hyland, et al., 2023), there were no sex differences in the prevalence of *ICD-II* PGD in the present study. Prior research has demonstrated different PGD disorder trajectories for male and female participants, where men demonstrate acute but decreasing PGD symptoms, and women demonstrate symptoms that worsen over time (Lunderoff et al., 2020). Consequently, it is likely that any sex differences in PGD symptoms cancel each other out over time. Although there were no age differences in the prevalence of *ICD-II* PGD for the Irish sample, the proportion of people who met the diagnostic criteria for probable *ICD-II* PGD significantly decreased with age for the U.K. sample. Our results provide no insight into why younger adults in the United Kingdom are more vulnerable to *ICD-II* PGD than younger adults in Ireland, but this is an issue worth attending to in future research.

Strengths of the present study include the investigation of two large nationally representative samples of bereaved adults as well as the development and validation of a novel measure of *ICD-II* PGD. Additionally, the brief nature of the IGQ, which is ideal for screening purposes, is a major strength. Despite the strengths of this study, it is important that these findings are considered in light of some limitations. First, the sampling method was nonproba-

bility in nature, and especially vulnerable members of society such as those who were hospitalized, incarcerated, or homeless, were not contactable. Therefore, our findings may not generalize to the entire bereaved population. Second, and relatedly, the United Kingdom and Ireland are culturally similar in that they are both Western European, English-speaking, historically Christian-dominated nations. The cultural similarities between these two countries may explain the invariance of the IGQ in the present study and, hence, how these findings translate to socially, culturally, and religiously distinct nations is unknown. Further research is necessary to determine whether the IGQ is invariant across different countries and cultural contexts. Third, the cross-sectional design of the study meant it was not possible to examine the temporal stability of IGQ scores nor changes in symptom scores and probable diagnostic rates over time. Fourth, we were unable to test the discriminant validity of the IGQ in the current study; thus, further research is required to determine the discriminant validity of the IGQ. Fifth, although the goal of this study was to develop a brief measure of *ICD-II* PGD, brief measures also have their limitations, including the inability to examine more complex symptom structures of the diagnostic construct under investigation as well as being unable to capture a wide breadth of symptoms. In addition, some of the items refer to more than one aspect of emotional pain, meaning the IGQ lacks the ability to identify specific aspects of the grief response and would not capture the breadth of the grief response; for symptom-specific, and broader, assessment, a clinical interview would be better. Finally, we did not compare the functioning of this scale with other PGD scales, and future research should compare the psychometric properties of the scores from the IGQ and alternative measures, such as the IPGDS and the TGI-SR+.

To conclude, the introduction of PGD into the psychiatric diagnostic nomenclature is an important development in the study of pathological grief. In this study, we provide researchers and clinicians with a short, easy-to-use, self-report screening measure of PGD.

## OPEN PRACTICES STATEMENT

The study reported in this article was not formally preregistered. Neither the data nor the materials have been made available on a permanent third-party archive; requests for the data or materials should be sent via email to the lead author at [m.shevlin@ulster.ac.uk](mailto:m.shevlin@ulster.ac.uk).

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## SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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## APPENDIX 1

## The International Grief Questionnaire (IGQ)

## The International Grief Questionnaire

Below are a number of problems that people sometimes report following the death of a person close to them. Using the scale below, please indicate how much you have been bothered by each of the following over the **past week**.

Not at all	A little bit	Moderately	Quite a bit	Extremely	
0	1	2	3	4	
1. Yearning for the deceased <i>almost every day?</i>	0	1	2	3	4
2. Thinking too much about the deceased <i>almost every day?</i>	0	1	2	3	4
3. Feeling guilty or angry about my loss.	0	1	2	3	4
4. Having trouble accepting the death of my loved one.	0	1	2	3	4
5. Feeling sad or emotionally numb.	0	1	2	3	4

Have these experiences caused problems in personal, family, social, educational, occupational, or other important areas of your life?

- Yes  
 No

Do you consider your grief to be worse (more intense and/or of longer duration) than what would be normally expected in your community or culture?

- Yes  
 No