To What Extent Does The Traumatic Grief Inventory-Self-Report Plus Demonstrate Adequate Local Reliability At High Symptom Levels For A Population Of Individuals Bereaved By Violent Death?

Student: Nora van de Lindeloof, (s5177987)
Supervisors: Dr. M.S.C Paap & Antje Janshen, MSc
Second assessor: A.C. Timmermans

Rijksuniversiteit Groningen
Pedagogical Science, Faculty of Behavioural Sciences
Bachelor thesis pedagogical and educational science
May, 2026

Wordcount: 4637

Summary

Prolonged grief disorder is a disorder by which individuals experience extreme feelings of grief for an abnormally long period of time. To determine whether an individuals suffers from prolonged grief symptoms it is important to develop good instruments, the TGI-SR+ is one of the instruments that was developed for these purposes. This paper aims to determine to what extend the local reliability and targeting of the TGI-SR+ perform adequately for a population including Dutch individuals bereaved by violent death. These individuals are more prone to experience prolonged grief disorder which makes it especially important to find adequate and appropriate instruments for this population. Local reliability estimates exceeded 0.80 across a theta range of −3.5 to 3.0, suggesting that the TGI-SR+ demonstrates sufficient reliability within this range to support individual-level interpretations for this population. Targeting demonstrates an adequate coverage of the beta range for the observed theta scores of participants. These findings suggest that the TGI-SR+ can be use for screening purposes in a population of Dutch individuals bereaved by violent death.

Introduction

Prolonged grief disorder (PGD) is a disorder characterized by intense and persistent grief experiences after bereavement of a loved one. Individuals who suffer from PGD experience difficulties with separation distress and other accompanying symptoms that influence their daily functioning (Killikelly et al., 2025). It is important that these individuals receive appropriate mental health care, which requires an accurate and reliable diagnosis. In order to provide this reliable diagnosis it is important to empirically study prolonged grief symptoms and understand how they can be measured. Without proper and reliable measurement individuals who suffer from prolonged grief symptoms following the loss of a loved one can not receive the needed healthcare. The prevalence of prolonged grief disorder among adults in Europe, North America and parts of Asia and Africa was estimated to range

between 1,5-15,3% (Nafarieh et al., 2025), implying that there are differences in how many people are diagnosed with PGD.

Prolonged grief disorder is a relatively young diagnosis, the first version of the disorder (Consistent Complex Bereavement Disorder) was included in the DSM-5 in 2013. In 2018 a revised version of the disorder was included in the ICD-11 and in 2022 the DSM-5-TR included a similar revised version of the diagnosis (Killikelly et al., 2025). Eisma et al. (2022) researched the differences between different classification systems used to diagnose prolonged grief disorder. These classification systems use different criteria to diagnose prolonged grief disorder, which could explain the variable range in prevalence. The DSM-5-TR and ICD-11 use similar criteria for prolonged grief disorder, however they are not the same (Eisma et al., 2022). The ICD-11, for example, uses more criteria for accompanying symptoms than the DSM-5-TR, and the DSM-5-TR requires individuals to experience more criteria than the ICD-11. Another difference between the criteria for Prolonged Grief Disorder concerns the required duration of symptoms. These differences within classification systems could complicate the process of diagnosing individuals who experience difficulties with grief.

This implies the significance of the development of reliable and valid instruments to measure prolonged grief disorder. Although PGD was added to major classification systems, the research and development of adequate instruments to measure the symptoms individuals experience are still limited. Without adequate instruments to measure whether individuals suffer from prolonged grief symptoms or not, it is difficult to research how to help individuals who suffer from prolonged grief symptoms and to facilitate the right mental health care, which is why it is important to research psychometric properties of existing instruments. By studying how symptoms emerge and develop, we can gain a better understanding of how to support individuals experiencing prolonged grief symptoms.

The traumatic grief inventory-self report plus (TGI-SR+) is a 22-item questionnaire which identifies to what extent an individual suffers from prolonged grief symptoms. The questionnaire uses system-specific item combinations which resemble the different criteria from classification systems. Treml et. al (2021) researched different assessment instruments for PGD and found that the TGI-SR + is the only assessment instrument that currently uses items that entirely represent both the ICD-11 criteria and the DSM-5-TR criteria. The first psychometric exploration of this questionnaire found that there is ground to believe that the questionnaire could be useful as an instrument to measure prolonged grief disorder (Lenferink et al., 2021). However, there are a few considerations to keep in mind. A psychometric evaluation study was done within a population of Dutch adults which could limit generalizability of the findings. Because the scores were based on self-report measures, response bias may have influenced the variability and reliability of the results (Giromini et al., 2022). The psychometric properties of the TGI-SR+ were also examined in a study using exploratory factor analysis and item response theory by Koukou-Kpolou et.al (2022). Although they found the psychometric values and the test-retest reliability to be high (McDonald's $\omega = 0.97$), the study was done using scores on the entire range of symptom levels. This means the sample used for this study included individuals with high and low symptom levels. Another consideration is the fact that within the population on which the questionnaire was tested, there are important subgroups. These subgroups may have differences in psychometric properties which could influence the validity and reliability of the questionnaire as an instrument to measure prolonged grief symptoms (Hill et al., 2020).

One of these subgroups includes individuals who are bereaved by violent death. Individuals bereaved by violent death are at increased risk of more severe and complicated grief reactions compared to those bereaved by natural cause (Kristensen et al., 2012). Buur et. al (2023) found these individuals to be more at risk for developing PGD. Disorders that are

associated with bereavement by violent death are: prolonged grief disorder, major depression, PTSD and substance usage disorder (Rice et al., 2024). Milman et. al (2017) found that prolonged grief symptoms are overrepresented in a population of individuals bereaved by violent death. These findings emphasise the importance of researching how the TGI-SR+ measures the construct of prolonged grief symptoms in a population of violently bereaved individuals. This research can contribute to identifying and developing appropriate healthcare for individuals bereaved by violent death who experience prolonged grief symptoms. The TGI-SR+ seems to have adequate psychometric properties for a broader population, as mentioned before the reliability Kokou-Kpolou et al. (2022) found is reasonably high (McDonald's $\omega = 0.97$). This could indicate the value of examining the psychometric properties of the TGI-SR+ in a population of individuals bereaved by violent death.

The aim of this study is to examine the psychometric properties of the TGI-SR + for individuals bereaved with violent death. To answer the research question of this paper IRT will be used for analysis, as they allow for the examination of item-level functioning in relation to the underlying latent trait specifically. IRT provides detailed information on how well individual items discriminate between different levels of the latent trait (Nguyen et al., 2014). This gives us the opportunity to determine whether the TGI-SR+ is especially suitable to assess prolonged grief symptoms of individuals with high symptom levels. This paper will examine the following research questions: *To what extent does the traumatic grief inventory-self-report plus demonstrate adequate local reliability at high symptom levels for a population of individuals bereaved by violent death? And do item properties of the TGI-SR+ match relevant person scores in a population of individuals who experienced violent loss?*

Methods

Design and Procedure

The research design used in this paper is a cross-sectional survey study. In this paper a secondary data-analysis was executed. The data was collected by convenience sampling for previous research by Eisma and Tamminga (2020). The data was collected during the period between 2019 and 2022. Participants were recruited in a healthcare setting, where individuals were directed by Psyned; a Dutch healthcare organisation, to complete the TGI-SR+ assessment. The individuals who completed the TGI-SR+ signed up to do a self-test for prolonged grief symptoms, this suggests a prior interest in prolonged grief symptoms and could suggest a self-report bias. From the dataset that Eisma and Tamminga (2020) collected a subsample was extracted, this subsample included individuals who lost their loved ones by violent death. This subsample is the sample used for the analysis in this paper. Rights of the participants were protected by anonymisation of the data and ethical approval on the research proposal before the start of the study. The approval was given by the ethics committee of the psychology faculty on the RUG. Before completing the questionnaire, participants were informed about the aim of the study, the procedure, how their data would be handled, and the voluntary nature of their participation. The participants could also choose to fill out the TGI-SR+ without giving permission for including their scores in the study.

Population and Sample

The population that is aimed to be evaluated in this paper includes Dutch adults who were bereaved by violent death. The psychometric properties for the instrument TGI-SR+ will be evaluated specifically for this population. The sample used for the analysis consisted of individuals in the Netherlands who were bereaved by violent death and completed the TGI-SR+ between 2019 and 2022. The sample used for this study included 796 participants. In Table 1 a few sample characteristics are displayed. The sample represents the population reasonably well aside from the fact that women are overrepresented in the sample.

Table 1.

Sample characteristics.

Sample characteristic	*n* = 796
Age, M(SD)	41.04(14.70)
Gender n(%)	
Woman	646(81.2%)
Man	144(18.1%)
Other	6(0.8%)
Cause of death (unnatural)	
Accident	328(41.2%)
Suicide	416(52.3%)
murder	52(6.5%)
Relation to deceased n(%)	
Partner	166(20.9%)
Parent	155(19.5%)
Child	151(19%)
Sibling	127(16%)
Other family	74(9.3%)
Friend	123(15.5%)
Expectedness of death n(%)	
Expected	12(1.5%)

Unexpected	641(80.5%)
Both expected/unexpected	138(17.3%)
Neither expected/unexpected	5(0.6%)
Time since loss, M(SD)	45.03(92.71)

Variables and Instruments

Sociodemographic and Loss-Related Characteristics

A self-constructed questionnaire was used to measure relevant sociodemographic and loss related characteristics. These variables were gathered before the participants filled in the TGI-SR+. The sociodemographic characteristics that were gathered are: age (in years) and gender (male=1, female=2 other=3). The loss related characteristics that were gathered are: time since loss (in months), relationship with the deceased (partner=1, parent=2, child=3, sibling=4, other family=5, friend=6) cause of loss (accident=2, suicide=3, murder=4) and expectedness of the loss (expected=1, unexpected=2, both expected and unexpected=3, neither expected nor unexpected=4). These characteristics are partly displayed in table 1.

Prolonged Grief Symptoms

The TGI-SR+ aims to measure prolonged grief symptoms, these are symptoms individuals experience when they suffer from intense negative emotions following the loss of a loved one. Prolonged grief symptoms include persistent longing for the deceased, intense emotional pain, difficulties accepting death, feelings that life is meaningless and significant distress and impairment in functioning (Lechner-Meichsner et al., 2026). The TG-SR+ includes 22 items and does not have subscales. Each item is a statement about the experience

of specific symptoms which participants rank on the 5-point Likert scale. An example of one of the items included in the TGI-SR+ is: ” *I had intrusive thoughts or images related to the person who died*”(item 1). Participants answer this statement with one of 5 answer options ranging from never/always. In the attachments of this paper the entire TGI-SR+ will be included so that one can read the individual items (page 25 and 26). A total score can be calculated by summing all the answers on the individual items. The maximum total score is 110 and the minimum total score is 22. As mentioned before the TGI-SR+ was examined on its psychometric properties in previous research multiple times. Some of these studies found the psychometric properties of the TGI-SR+ promising. Kokou-Kpolou et al. (2020) found that the TGI-SR+ demonstrated good reliability in a population of individuals living in French-speaking countries, with a McDonald’s ω of 0.97 based on the ICD-11 criteria. Uotani et al. (2026) found that the Japanese translation of the TGI-SR+ had a reliability of McDonald’s ω= 0,94 for the ICD-11 and McDonald’s ω= 0,93 for the DSM-5-TR. The population Uotanu et. al (2026) examined included Japanese adults.

Analysis Plan

The research question of this paper will be answered using IRT analysis. First the generalized partial credit model (GPCM) will be estimated. This is an IRT model which uses polytome data such as the data used in this paper with a 5-point Likert scale. The GPCM estimates the beta parameters.

The local reliability of the TGI-SR+ will be estimated to determine whether the TGI-SR+ has adequate psychometric properties for the aimed population of this paper or not. The local reliability will be examined by making a graph which displays the reliability for different theta levels. Because of high symptom levels within the population of this paper, the local reliability of high symptom levels will be examined especially. These high symptom levels are defined as theta scores within a range of 0-2. Given that the TGI-SR+ is intended

for individual diagnostic purposes, a reliability threshold of 0.80 was considered appropriate (Evers, 2012) . If the local reliability for high symptom levels is lower than 0.8, the research question needs to be answered with a negative conclusion, suggesting insufficient local reliability for high symptom levels.

Along with the local reliability, targeting will be examined to determine to what extent the TGI-SR+ is appropriate to use for the population of this paper. Targeting checks whether the beta parameters of the items in the TGI-SR+ align with the theta scores of the participants in the dataset. The estimated beta parameters will be displayed in a histogram as well as the theta parameters. Both histograms will be compared with each other to determine whether the same theta range is covered by the item parameters. If the same range is covered by both parameters the research question needs to be answered in a positive manner, suggesting that the TGI-SR+ has appropriate targeting.

Beforehand of the analysis, the itemfit of the data on the model will be examined to determine if the GPCM is the right model to use for this paper. To determine if the items fit well to the model a chi-square test will be conducted. If significant p-values are found for items of the TGI-SR+, then these items do not fit well to the model. A p-value of lower than 0,05 will be considered significant.

Local independence will be evaluated using Yen's Q3 to examine potential dependencies between TGI-SR+ items, which could affect estimates of local reliability and targeting. The threshold that will be used to determine if the assumption holds is |0,20|. If itempairs are found that exceed the threshold, it will be determined to what extent this could influence the psychometric properties of the TGI-SR+.

The ascending order of the beta parameters will be checked using both operating characteristic curves and the estimated parameters. The operating characteristic curves will

indicate whether the answer options of the used Likert scale overlap or not. If there is substantial overlap and violations in the ascending order of the beta parameters, this may affect the reliability of participants' scores. If the beta parameters are not in ascending order this could mean that the answer options do not differentiate well. This could influence the reliability of the scores participants have.

The analysis executed in this paper will be done in the software programme R version: 4.5.2. (R Core Team, 2026). R studio will be used as well (Posit Team, 2024). The package that was used to estimate the GPCM is the mirt package (Chalmers, 2012).

Results

Data Description

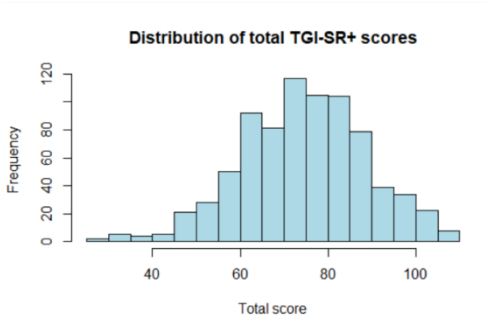
There were 39 variables with minimal missing data. All TGI-SR+ items were complete, with 796 observations each. There was however some missing data on the variable which measured how much time passed since the bereavement of the participant, for this variable there were 44 missing answers. For the variable age there were also few missing values, there were 10 missing answers for this variable. No alterations were made to the data, considering there were only missing values in a part of the sample that did not have to be used for answering the research question. There were no items for which one of the answer categories of the Likert scale had less than 15 observations. The sample characteristics were described in the method section of this paper.

Descriptive Statistics

The mean total score on the TGI-SR+ is 75.07 out of 110 and the standard deviation is 14.26. In figure 1 a distribution of the scores on the TGI-sr+ is displayed.

Figure 1

Distribution of total scores



For each item the standard deviation and mean score were calculated (Table 2). For item 17 ("*I had a desire to die in order to be with the deceased*") the mean score is below average and the standard deviation is above average, which could indicate the fact that the item stands out from the rest of the items. The same statement holds for item 12 ("*I felt stunned, shocked, or dazed by his/her death* "), however the standard deviation for this item is not higher than average. Aside from these 2 items, the items in the TGI-SR+ show similar mean values and standard deviations, there are no extreme differences between the items. This implies that these items elicit comparable answer patterns and may therefore reflect a common underlying construct.

Table 2

Descriptive Statistics

Item	Mean	Standard deviation
1	3.64	0.89
2	3.84	0.82
3	3.82	1.01
4	3.74	1.07
5	3.87	1.11

6	2.78	1.24
7	3.05	1.21
8	3.78	1.17
9	3.35	1.10
10	3.53	0.97
11	3.41	1.13
12	4.08	1.00
13	3.61	1.00
14	3.61	0.95
15	2.73	1.16
16	3.13	1.24
17	2.47	1.31
18	3.58	0.97
19	4.06	0.98
20	2.61	1.34
21	3.64	1.21
22	3.41	0.99

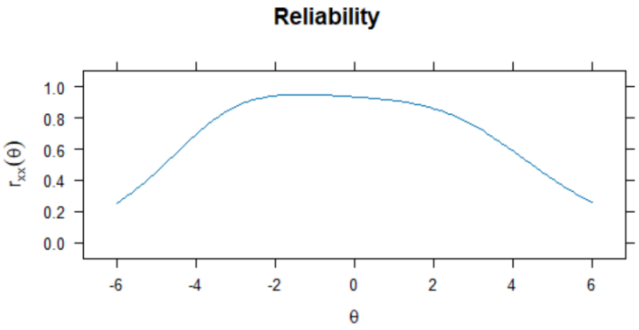
Local Reliability

The reliability for the GPCM model for this sample was estimated to be 0.92. The local reliability was estimated to be higher than 0.8 in between a theta range of -3.5 ; 3. High

symptom levels are determined to be in between a theta range of 0 – 2. The range of high symptom levels falls within the range with reliability higher than 0.8. With reliability exceeding 0.8 at high symptom levels, the TGI-SR+ seems to be suitable for individual diagnostic purposes (Evers, 2012). In Figure 2 a visual representation of the local reliability is displayed.

Figure 2

Local Reliability

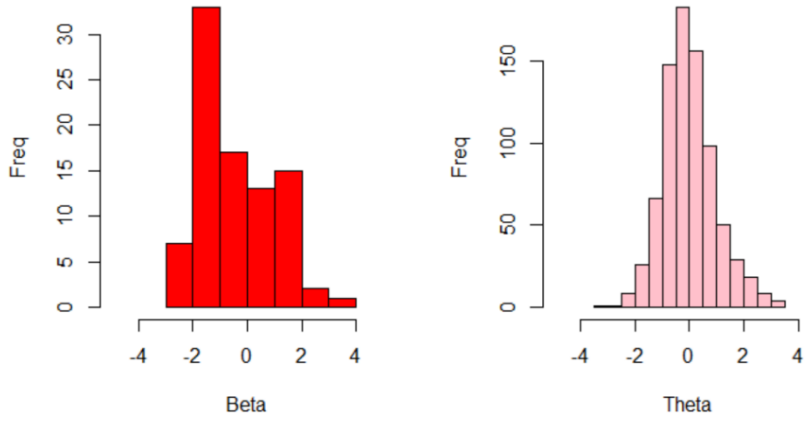


Targeting

As one can see in Figure 3, the range of theta and beta values is similar. However there are less items with a beta value higher than two, this means that the test is less accurate for individuals with a theta score of 2 and higher. This is consistent with the local reliability which shows lower reliability with theta scores higher than 2. In the theta range one can see that there are fewer observations of these theta scores, however there are a few. The beta frequency for theta score in between a range of 0 – 2 has an average height. A striking observation is that the beta frequency for a theta score of -2 is quite high while the observations of individuals with this theta score is not. Considering the similar range of the theta and beta values the TGI-SR+ seems to adequately measure the theta scores of relevant participants.

Figure 3

Histogram beta parameters (left) and histogram theta parameter (right)



Assumptions

The assumption that was analysed is the local independence. There were 19 itempairs that exceeded the threshold of |0.20|. However, the degree of violation was limited, with most item-pair correlations remaining below |0.25|. There were 8 item pair correlations that did exceed that number. In table 3 the itempair that exceeded the threshold of |0.20| are displayed. Item 12 and 5 exhibited 4 item-pair correlations above |0.20|, potentially indicating local dependence. Item 3 exhibited 5 item-pair correlations above |0.20|. This may imply that responses to item 12, 3 and 5 are not independent.

Table 3

Local independence violations

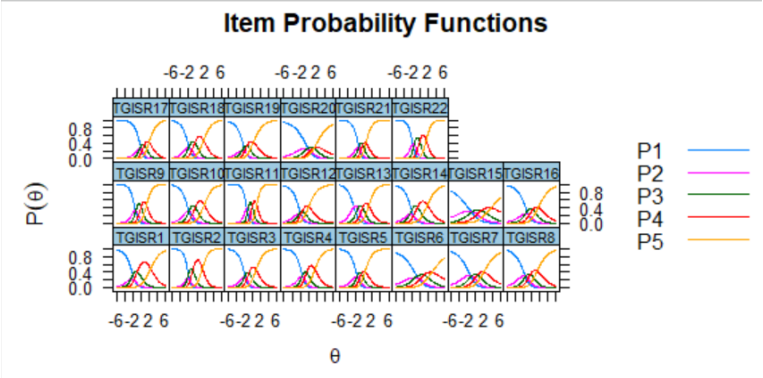
Item pairs	Yen's Q3
2-3	0.236
2-7	-0.212
3-4	-0.261
3-7	-0.258
4-5	-0.260
4-7	0.209
5-12	0.325

5-18	-0.305
11-3	0.213
12-4	-0.2
12-14	0.425
15-3	-0.243
15-11	-0.209
18-7	0.247
22-3	-0.264
22-5	-0.232
22-19	-0.220
12-18	-0.226
12-19	0.416
19-4	-0.243

The second aspect that was analysed is whether the beta parameters of the answer categories were in an ascending order. This does not hold, there were a lot of items which did not have an ascending order of beta parameters. Only item 17 ("*I had a desire to die in order to be with the deceased* ") and 20 ("*I had difficulties experiencing positive feelings*") showed an ascending order of the beta parameters for answer categories. For most of the items the first two beta parameters of the answer categories were in opposite order. The operative characteristic curves of the items were examined as well to determine the extent of overlap of the answer categories. In Figure 4 the operative characteristic curves of all the items are displayed. Although item 17 and 20 had an ascending order of beta parameters, all the items show a lot of overlap which could indicate difficulties in distinguishing different answer options in the items.

Figure 4

Operative Characteristic Curves



Along with the local independence and ascending order of the beta parameters, the items' fit to the model was analysed. There were 2 items that had a significant p-value on the chi-square test. These items had the following p-values: 7; 0.028, item 18; 0.016. The remaining items exhibited higher p-values, suggesting that the GPCM provides an adequate fit to the participants' responses for these items.

Discussion

This paper aimed to determine to what extent the local reliability and targeting of the TGI-SR+ are adequate for a population including individuals bereaved by violent death. These individuals show higher symptom levels on average, this makes these individuals more prone to developing prolonged grief disorder. Which is why the psychometric properties of the TGI-SR+ for this specific population was examined. For individuals included in the examined sample with high symptom levels the TGI-SR+ the local reliability is high enough to make assumptions on the individual level. Analysis on targeting suggests that the TGI-SR+ has an adequate range of beta parameters for the observed theta scores. This means the TGI-SR+ could be used for research purposes and could carefully be used for individual diagnostic and screening purposes. For diagnosis and assessment purposes, further research is recommended.

The analysis of local reliability indicates that the TGI-SR+ provides adequate measurement precision for individuals with high symptom levels. Targeting illustrates that the set of items in the TGI-SR+ provides sufficient coverage, such that for almost every theta level there is a well-matched item with suitable response categories. This means that for individuals with wide ranging theta scores there are adequate items, which results in more reliable total scores and provides a thorough representation of the scores of individuals on the TGI-SR+. Our findings align with prior research on the psychometric properties of the TGI-SR+, which showed promising results. In different countries the TGI-SR+ was examined on its psychometric properties. In Italy, Lenzo et al. (2025) found that the TGI-SR+ had promising psychometric properties and McDonalds ω = 0.92. In Spain,, they found that the psychometric properties of the Spanish version of the TGI-SR+ were promising as well and estimated a reliability of (McDonalds ω=0.99; Fernández-Alcántara et al., 2025). Research conducted in Sweden by Lenferink et al. (2024) likewise demonstrated promising psychometric properties of the TGI-SR+, with McDonald's ω ranging from 0.90 to 0.91. In a study on the psychometric properties of the TGI-SR+ in a population of Peruvians yielded promising results (Chavez et al., 2025). A distinctive feature of this study is that the sample that was used included a significant proportion of individuals who lost their loved one in an unexpected manner. This matches the characteristics of the sample used in this study, since individuals who lost their loved one to a violent death often do not expect this to happen. The fact that in prior studies similar results on the analysis of psychometric properties were found gives us grounds to believe that the results found in this paper were not found by chance. However the reliability found in this study is lower than researchers found in the previously mentioned. A possible explanation for this could be that the population used in this study is more specific and has less variability in theta scores, which could reduce the reliability estimates.

To determine whether the GPCM was suitable for addressing the research questions for this dataset, one assumption and two additional aspects, namely item fit and the ascending order of the beta parameters, were evaluated. There were a few violations discovered in the analysis on these subjects. For a polytome dataset one of the assumptions is that the beta parameters of the answer options of the items must be in an ascending order. Unfortunately, this assumption does not hold for most items of the TGI-SR+, only 2 items had answer options in ascending order. This could be an indication of problems in the construct validity of the test. If there are problems with the construct validity that could suggest less accurate total scores on the test. Another violation in the assumption that needs to be addressed is the fact that there were 19 item pairs for which the local independence did not hold the criteria of being lower than |0,2|. This suggests that the response on these items may not be independent, which could influence the reliability of the total scores as well. Problems with the reliability of total scores could cause overestimates on analysis done to determine the reliability of the test. A solution for this problem would be to delete or replace items that violate the assumption of local independence and better differentiate the answer categories of the items.

This study has a few strengths and limitations, which should be mentioned. The sample used for this study is large and represents the population relatively well. The sample includes a similar distribution of causes of death as the aimed population. The most common unnatural death in the sample is suicide, and in the aimed population of Dutch bereaved individuals this is also the most common cause of unnatural death (Centraal Bureau voor de Statistiek, 2025). However women are overrepresented in the sample which could cause problems with the generalisability of the findings in this study. The data collection process also has a few flaws. The data was collected using a convenience sample as well as using self-report methods. This could suggest a self-selection bias in the reliability of the scores in the dataset. A strength of this paper is the use of IRT, a method in analysing psychometric

properties of tests which gives researchers the opportunity to analyse a test and its items performance in great detail. The data was collected in a historically influential time span, namely during the covid-19 pandemic, this could influence the generalizability of the findings in the study, because individuals included in the sample had to cope with the isolation in the covid-19 pandemic during their grieving process. Although there are violations of the assumptions, the items fit the model quite accurately. For only 2 items out of the total of 22 items, a significant p-value was found. This means the items fit well with the chosen GPCM which makes the analysis that were examined more meaningful. A good item fit to the chosen model indicates that the observed scores align with the expectations that the model provides, this suggests that the scores on the TGI-SR+ actually apply to measuring prolonged grief symptoms. If the items fit well to the model, the interpretations that can be made based on analysis are more accurate and violations actually suggest problems. This gives researchers the opportunity to focus on addressing specific problems and strengths of the TGI-SR+. It could be interesting to investigate why the 2 items that did have a significant p-value fit less well with the model, and if it would be beneficial to remove these items from the TGI-SR+.

Our findings may have implications for professionals in the health care field. Professionals could use the TGI-SR+ for individual assessment of symptoms, but should still be careful with using the TGI-SR+ as the only instrument to diagnose individuals with PGD. It could be used as a screening tool to gather information about the extent of problems individuals experience with their grief. However, professionals should keep in mind that the TGI-SR+ should only be used as a tool to help with other diagnostic methods, it should not be the only tool used. Professionals should also use their own expertise and should always build their diagnosis on a basis of adequate and decent casuistic research.

Future research should further inspect the TGI-SR+ and examine how the psychometric properties of the TGI-SR+ perform for populations in different cultures. The

TGI-SR+ was primarily examined in cultures which are individualistically oriented and often in countries with western influences and psychometric properties may differ across different populations. It could be interesting to examine how the TGI-SR+ performs for individuals in more collectively oriented countries. Further research on the TGI-SR+ could include more advanced use of IRT methods, there are a lot more ways to use IRT for further and more detailed research on the TGI-SR+. Another recommendation for further research is inspecting why the assumptions did not hold, and how to overcome that problem.

To conclude, the TGI-SR+ could be used for screening purposes to determine to what extent individuals suffer from PG symptoms. The local reliability and targeting in this study suggests that the TGI-SR+ could be used for a population of individuals bereaved by violent death, but it is important to be careful with using the TGI-SR+ as the only measurement instrument in a process of diagnosing individuals. The TGI-SR+ could be used by professionals as an assessment tool to gather information about the symptoms individuals suffer from. Further research should focus on different cultures and could use more detailed methods of IRT. Although a lot more research could and should be done, the TGI-SR+ is a good start to help individuals who suffer from prolonged grief symptoms get recognition about their suffering and get help with their struggles.

References

Buur, C., Zachariae, R., Komischke-Konnerup, K., Marello, M., Schierff, L., & O'Connor, M. (2023). Risk factors for prolonged grief symptoms: A systematic review and meta-analysis. *Clinical Psychology Review*, *107*, 102375. https://doi.org/10.1016/j.cpr.2023.102375

Centraal Bureau voor de Statistiek. (2025, 5 september). *Doodsoorzaken, 2020 – maart 2025*. Centraal Bureau Voor de Statistiek. https://www.cbs.nl/nl-nl/maatwerk/2025/36/doodsoorzaken-2020-maart-2025

Chavez, J. B., Hoyos, M. L. F. R., Costa, R., & Lenferink, L. I. M. (2025). The psychometric properties of the Peruvian traumatic grief inventory-self report plus (TGI-SR+) in bereaved people. *Death Studies*, 1–11. https://doi.org/10.1080/07481187.2025.2608230

Chalmers, R. P. (2012). mirt: A Multidimensional Item Response Theory Package for theREnvironment. *Journal Of Statistical Software*, *48*(6). https://doi.org/10.18637/jss.v048.i06

Eisma, M. C., Janshen, A., & Lenferink, L. I. M. (2022). Content overlap analyses of ICD-11 and DSM-5 prolonged grief disorder and prior criteria-sets. *European Journal Of Psychotraumatology*, *13*(1), 2011691. https://doi.org/10.1080/20008198.2021.2011691

Evers, A. (2012). The Internationalization of Test Reviewing: Trends, Differences, and Results. *International Journal Of Testing*, *12*(2), 136–156. https://doi.org/10.1080/15305058.2012.658932

Fernández-Alcántara, M., Redondo-Armenteros, A., Pérez-Marfil, M. N., Cabañero-Martínez, M. J., Congost-Maestre, N., & Cruz-Quintana, F. (2025). Psychometric properties of the Spanish version of the Traumatic Grief Inventory Self Report Plus (TGI-SR+). *Psicothema*, *37*(1), 81–90.

Giromini, L., Young, G., & Sellbom, M. (2022). Assessing negative response bias using Self-Report measures: New articles, new issues. *Psychological Injury And Law*, *15*(1), 1–21. https://doi.org/10.1007/s12207-022-09444-2

Hill, R. M., Dodd, C., Oosterhoff, B., Layne, C. M., Pynoos, R. S., Staine, M. B., & Kaplow, J. B. (2020). Measurement Invariance of the Persistent Complex Bereavement Disorder Checklist With Respect to Youth Gender, Race, Ethnicity, and Age. *Journal Of Traumatic Stress*, *33*(5), 850–856. https://doi.org/10.1002/jts.22560

Killikelly, C., Smith, K. V., Zhou, N., Prigerson, H. G., O'Connor, M., Kokou-Kpolou, C. K., Boelen, P. A., & Maercker, A. (2025). Prolonged grief disorder. *The Lancet*, *405*(10489), 1621–1632. https://doi.org/10.1016/s0140-6736(25)00354-x

Kokou-Kpolou, C. K., Lenferink, L. I. M., Brunnet, A. E., Park, S., Megalakaki, O., Boelen, P., & Cénat, J. M. (2022). The ICD-11 and DSM-5-TR prolonged grief criteria: Validation of the Traumatic Grief Inventory-Self Report Plus using exploratory factor analysis and item response theory. *Clinical Psychology & Psychotherapy*, *29*(6), 1950–1962. https://doi.org/10.1002/cpp.2765

Kristensen, P., Weisæth, L., & Heir, T. (2012). Bereavement and Mental Health after Sudden and Violent Losses: A Review. *Psychiatry*, *75*(1), 76–97. https://doi.org/10.1521/psyc.2012.75.1.76

Lechner-Meichsner, F., Hagenaars, M. A., & Boelen, P. A. (2026). Grief-related mental images and their association with prolonged grief symptoms and grief cognitions: a mixed-methods study. *Memory*, *34*(4), 369–384. https://doi.org/10.1080/09658211.2026.2627189

Lenferink, L. I. M., Eisma, M. C., Smid, G. E., de Keijser, J., & Boelen, P. A. (2022). Valid measurement of DSM-5 persistent complex bereavement disorder and DSM-5-TR and ICD-11 prolonged grief disorder: The Traumatic Grief Inventory-Self Report Plus (TGI-SR+). *Comprehensive Psychiatry*, *112*. https://doi-org.proxy-ub.rug.nl/10.1016/j.comppsych.2021.152281

Lenferink, L. I. M., van Dijk, I., Eisma, M. C., Eklund, R., Boelen, P. A., & Sveen, J. (2024). Psychometric evaluation of the Swedish Traumatic Grief Inventory Self-Report Plus (TGI-SR+) in bereaved parents. *Clinical Psychology & Psychotherapy*, *31*(1). https://doi-org.proxy-ub.rug.nl/10.1002/cpp.2922

Lenzo, V., Fontana, A., Santoro, G., Cuzzocrea, G., Miniati, V., Quattropani, M. C., Boelen, P. A., Caretti, V., Schimmenti, A., & Sideli, L. (2025). Psychometric properties of the Italian Traumatic Grief Inventory-Self Report Plus (TGI-SR+). *Death Studies*, 1–9. https://doi.org/10.1080/07481187.2025.2537978

Milman, E., Neimeyer, R. A., Fitzpatrick, M., MacKinnon, C. J., Muis, K. R., & Cohen, S. R. (2017). Prolonged grief symptomatology following violent loss: the mediating role of meaning. *European Journal Of Psychotraumatology*, *8*(sup6), 1503522. https://doi.org/10.1080/20008198.2018.1503522

Nafarieh, K., Krüger, S., Deutscher, K., Schreiter, S., Mundt, A. P., Jung, A., Fazel, S., Heinz, A., & Gutwinski, S. (2025). The prevalence of prolonged grief disorder according to the international classification of diseases 11: A scoping review. *European Archives of Psychiatry and Clinical Neuroscience*. https://doi-org.proxy-ub.rug.nl/10.1007/s00406-025-02046-4

Nguyen, T. H., Han, H., Kim, M. T., & Chan, K. S. (2014). An Introduction to Item Response Theory for Patient-Reported Outcome Measurement. *Patient*, *7*(1), 23–35. https://doi.org/10.1007/s40271-013-0041-0

Posit Team. (2024). RStudio: Integrated Development Environment for R (2024.09.0) [Software]. Posit Software, PBC. http://www.posit.co/

R Core Team (2024). *R: A Language and Environment for Statistical Computing*. R

Foundation for Statistical Computing, Wenen, Oostenrijk. https://www.R-project.org/

Rice, A. J., Fisher, J. E., & Cozza, S. J. (2024). Coping after violent loss: A systematic literature review and organizing model. *Journal of Loss and Trauma*. https://doi-org.proxy-ub.rug.nl/10.1080/15325024.2024.2415706

Treml, J., Kaiser, J., Plexnies, A., & Kersting, A. (2020). Assessing prolonged grief disorder: A systematic review of assessment instruments. *Journal Of Affective Disorders*, *274*, 420–434. https://doi.org/10.1016/j.jad.2020.05.049

Uotani, S., Lenferink, L. I. M., & Yoshida, S. (2026). Psychometric properties of the japanese translation of the traumatic grief inventory-self report plus (tgi-sr+). *Death Studies*. https://doi-org.proxy-ub.rug.nl/10.1080/07481187.2026.2646866

Supplements

Appendix A – The Traumatic Grief Inventory-Self Report Plus

		Never	Rarely	Sometimes	Frequently	Always
1	I had intrusive thoughts or images related to the person who died					
2	I experienced intense emotional pain, sadness, or pangs of grief					
3	I found myself longing or yearning for the person who died					

4	I experienced confusion about my role in life or a diminished sense of self					
5	I had trouble accepting the loss					
6	I avoided places, objects, or thoughts that reminded me that the person I lost has died					
7	It was hard for me to trust others					
8	I felt bitterness or anger related to his/her death					
9	I felt that moving on (e.g., making new friends, pursuing new interests) was difficult for me					
10	I felt emotionally numb					
11	I felt that life is unfulfilling or meaningless without him/her					
12	I felt stunned, shocked, or dazed by his/her death					
13	I noticed significant reduction in social, occupational, or other important areas of functioning					

	(e.g., domestic responsibilities) as a result of his/her death					
14	I had intrusive thoughts and images associated with the circumstances of his/her death					
15	I experienced difficulty with positive reminiscing about the lost person					
16	I had negative thoughts about myself in relation to the loss (e.g., thoughts about self-blame)					
17	I had a desire to die in order to be with the deceased					
18	I felt alone or detached from other individuals					
19	It felt unreal that he/she is dead					
20	I put an intense blame on other because of his/her death					
21	I felt as if a part of me has died along with the deceased					
22	I had difficulties experiencing positive feelings					

Note. The version of the TGI-SR+ that was used for data acquirement is the Dutch version.

Appendix B – AI declaration

No content generated by AI technologies has been presented as my own work.