

**When Grief Becomes Pathological: A Study of the Nature of Grief Reactions Among
Bereaved Ukrainians**

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Abstract

Prolonged Grief Disorder (PGD) is a mental disorder characterised by disturbed grieving reactions following bereavement. One risk factor for developing PGD is the cause of death. Therefore, this online survey study aimed to examine the effect of the cause of death on disturbed grieving reactions in the Ukrainian community ($N = 323$). Six causes of death were considered and clustered into war-related and war-unrelated causes. The Traumatic Grief Inventory-Self Report Plus (TGI-SR+) was used to measure PGD. Convergent validity was demonstrated through the comparison to the PCL-5 measuring Posttraumatic Stress Disorder ($r = .60$). The prevalence of PGD revealed a 41,7% probable caseness. It was expected that the cause of death would significantly impact PGD severity. Greater PGD among war-related causes of death was expected, in particular among ambiguous loss due to disappearance, war-related murder, and suicide. Consistent results were found across the analyses of PGD combining two criterion sets and each separately. Findings confirmed a significant impact of the cause of death on PGD ($F(6, 316) = 6.843, p < .001$). A significant difference in PGD was found among bereaved due to accident vs. physical illness ($p = .009$) and war-related murder vs. physical illness ($p < .001$). This study emphasises the high vulnerability and acute distress experienced by this sample and urges more research on this subject to support and address the needs of the Ukrainian population adequately.

Keywords: Prolonged Grief Disorder, PGD, grief, cause of death, bereavement, Ukrainians

Introduction

The Russian war in Ukraine has affected over 44 million Ukrainian inhabitants (Shevlin et al., 2022). Since the beginning of the war, approximately 10 million people have been driven out of the country and sought refuge. Additionally, the number of displaced people in Ukraine has increased to 7 million in the last year (Shevlin et al., 2022). The number of people who have died during the war is rising daily (Office of the United Nations High Commissioner for Human Rights, 2023). Since 2014, the conflict has claimed nearly nine thousand civilian lives, and tens of thousands more have been injured; however, this is only a rough estimate, and the verified numbers are expected to be much higher (Office of the United Nations High Commissioner for Human Rights, 2023). Moreover, the conflict reflects its scale not only on the casualties and destruction. What is often not regarded in numbers are the people affected by these losses, their traumatic experiences, and the impact it has on their mental well-being.

The challenges of adjustment to the new reality of armed conflicts are distressing, and the long-term consequences on mental health are yet to be seen. What is already evident in the population of Crimea post-invasion in 2014, is a high prevalence of clinically accepted criteria set for somatization (55%), depression (22%), posttraumatic stress disorder (PTSD) (21%), alcohol use (14.3%), and anxiety (18%) (Shevlin et al., 2022). Other studies examining the psychological impact of war also showed that migration could further affect the development of diverse mental health conditions (Bogic et al., 2015).

Ukrainians who fled the country may also face additional challenges that can affect their mental health. The study of Osokina et al. (2022) has shown that factors such as exposure to traumatic events, for example, witnessing the killing of civilians, highly correlate with PTSD and daily psychological distress. Further, settling in the host country and experiences during migration can negatively affect the individual's mental health. Such contributing factors can include problems with housing, finances, assimilating, and worries about the loved ones left behind (Li et al., 2016). Research has also shown that female refugees are more likely to experience stressors during migration (Steil et al., 2019). When looking at the long-term mental health effects of settling war refugees, a significant association of mental disorders pre- and post-migration can be observed (Bogic et al., 2015). Prevalence estimates of typically 20% were found for depression, PTSD, and unspecified anxiety disorders years after settling. Here, the greatest contributing factors were exposure to traumatic events pre-migration, the stress in the post-migration period, and low socio-economic status (Bogic et al., 2015).

Further, those who returned or remained in Ukraine face challenges that impair their daily functioning, such as water, food, and medicine shortages. A pilot study on a sample of citizens in Kyiv showed that 37% experienced house destruction, and 65.8% had a relative who suffered from house destruction (Lunov et al., 2022). Further, a recent study by Osokina et al. (2022) has shown a correlation between the inhabited region during the war and the symptoms of mental ill-being. Inhabitants of Ukrainian war regions with greater violence reported higher daily distress and trauma. The same is true for people with traumatic experiences such as witnessing armed attacks, becoming victims of violence, or being forced to leave their homes. These groups also show an increased risk for severe anxiety, moderately severe depression, and PTSD (Osokina et al., 2022).

Either way, the Ukrainian community is prone to significant vulnerability. The high probability and exposure to traumatic events only increase the psychological distress and risk of developing further mental disorders. One significant contributing factor to further increased distress from traumatic experiences is the loss of a loved one. A study examining the bereavement of Australian refugees showed that 43% lost a loved one (Bryant et al., 2020). Moreover, the severity of grief reactions following losing a loved one is often significantly higher in refugees (Lundorff et al., 2017).

Disturbed grief reactions

Life after losing a loved one is a big adjustment with a unique grieving process for every bereaved individual. There are different reactions people have to the loss of a loved one. These may also vary across cultures, genders, the nature of death, and support systems (Reed, 2010). Most people feel lost, distressed, and often impaired in their daily functioning. However, while many of these feelings may persist for a subsequent period, most individuals do not develop a mental health disorder or continue to experience psychological distress a year after the loved one has passed (Reed, 2010). Disturbed grieving is also known and can be classified as *prolonged grief disorder* (PGD). The symptoms can be exhibited by the inability to confront reality and grief reactions that are out of proportion to cultural, religious, spiritual, or age-appropriate norms (Prigerson et al., 2021). These grief reactions mainly vary in severity and length compared to healthy and normal grief responses and will be referred to as disturbed grief reactions. It is characterised by the persistence of these symptoms for up to six or 12 months (Lenferink et al., 2022). Thus, it has a significant impact on the daily functioning and mental health state of an individual. However, little is known about the causes of grieving reactions.

The spectrum of factors contributing to the severity of disturbed grieving reactions is great and often demonstrates mixed results. However, many studies report that the type of relationship with the deceased person greatly impacts grieving (Kokou-Kpolou et al., 2020). More specifically, a moderate to high effect on PGD was found when the deaths occurred among first-degree relatives such as a parent, child, or sibling (Kokou-Kpolou et al., 2020). Further, studies affirm that emotional regulation in individuals showing disturbed grief reactions may be disrupted by endorsing passive coping strategies such as withdrawal (Lacour et al., 2020). Trauma is one of the greatest contributors to disturbed grief, including exposure to traumatic events or circumstances of death (Kokou-Kpolou et al., 2020). Vulnerable groups who have previously experienced traumatic events or suffer from PTSD are much more likely to develop a grief-related disorder (Lenferink et al., 2022). Another essential consideration factor is that parental mental health is associated with grief disturbance in their children (Bryant et al., 2020).

This disturbance in the grief process is also classified as Prolonged Grief Disorder (PGD) in the DSM-5-TR and ICD-11 (Lenferink et al., 2022). While the PGD found in the DSM-5-TR examines the grief reaction after 12 months from the loss, the PGD in the ICD-11 focuses on 6 months post-bereavement. Then, the measurement of which classification should be used to accurately reflect the grief reactions? To accurately measure the disturbed grieving reaction, both classifications are included in the Traumatic Grief Inventory-Self Report Plus (TGI-SR+). The TGI-SR+ is one way to examine the impact of bereavement (Lenferink et al., 2022). This instrument includes both criteria sets and aids in comparing both grief disturbance classifications. Further, it proved good psychometric properties in Dutch-speaking bereaved samples but still needs testing in different bereaved communities, such as the Ukrainian population.

Cause of death

Developing a proper understanding of the mechanisms of disturbed grief can only be achieved by studying all the contributing factors. What seems to impact the severity of the grief reactions is the cause of the death of the loved one (Lenferink et al., 2022). Bereavement because of sudden loss is associated with greater severity of disturbed grief reactions (Lobb et al., 2010). Further, violent bereavement has also been shown to be a risk factor for developing PGD and often occurs in inhabited regions affected by armed conflict (Steil et al., 2019). A review of studies revealed that traumatic death, such as a war-related death of a parent, acts as a predictor for PGD (Kokou-Kpolou et al., 2020). Kokou-Kpolou et al. (2020) suggest that individuals bereaved by violent deaths more frequently face distressing reminders, which may

be associated with longer-lasting grief reactions. Generally, the traumatic circumstances of the death are shown to be reflected in the severity of PGD (Kokou-Kpolou et al., 2020).

Traumatic or violent deaths also often occur during times of war (Lubens & Silver, 2019). So far, not enough is known about suicide among civilians during war times. Most research focuses on war veterans as well as captives suggesting higher suicide rates among these groups. Meanwhile, a study examining the suicide rate during the Sri-Lankan civil war suggests a decline, which is in line with the Durkheimian theory that proposes social integration as an important determinant for suicide (Aida, 2020). However, suicides occurring in peaceful periods often result in greater coping difficulties (Lubens & Silver, 2019). Some research suggests a distinction between expected and unexpected death and its impact on grieving reactions (Lubens & Silver, 2019; Doering et al., 2022). Here, unexpected deaths classify as deaths that are natural, due to physical illness, accidents, or perceived as unexpected by the bereaved individuals. Deaths by suicide can be experienced either as expected or unexpected, depending on the perception of the loved ones. Overall, unexpected death acts as a risk factor for greater PGD experienced by loved ones (Doering et al., 2022). Further, ambiguous loss such as due to disappearance is also common in war-affected communities. The findings of Comtesse et al. (2022) suggest that individuals facing ambiguous loss may be specifically at risk of developing PGD. Research has also shown that indirect and direct mortality effects due to physical illness increased by approximately 51% during war (Jawad et al., 2020). This includes deaths from diseases that are communicable, maternal, neonatal, or nutritional (Jawad et al., 2020). Further, increased mortality among all causes is associated with war among all age and gender groups (Jawad et al., 2020).

However, there are many mixed results regarding how different causes of death impact grieving. Further, it is not clear why studies report conflicting results, indicating that the cause of death varies in its functionality in relation to disturbed grief. So far, not enough knowledge has been accumulated about the underlying factors for the association of causes of death and PGD in war-affected communities.

This research study

Therefore, it is important to examine the grief reactions in this bereaved group. First, it is crucial to establish the prevalence of PGD among mourning Ukrainians. Second, the study will examine the extent to which the cause of death impacts the severity of grief reactions among this war-affected community. While there have been studies on the predictors of developing PGD, most of these used non-war-affected populations and causes of death (Lobb et al., 2010). Based on these findings, it can be expected that the impact of the cause of death

of a loved one may have a different value in a war-affected community of bereaved Ukrainians.

Consequently, this study aims at examining the disturbed grieving experience in bereaved individuals who lost a loved one due to causes directly related to the war (murder or manslaughter related to the Russian war, disappearance), suicide, and non-war-related causes (physical illness, accident, murder or manslaughter not related to the Russian war, other causes). Since the cause of death or the type of loss is unalterable, studying it can help to understand the nature of grief and aim to support how to cope with it. Thus, it is needed to accurately represent the mental well-being of Ukrainians and eventually use this assessment to target their need for better support. Here, the central research question is to what extent does the cause of death impact the severity of disturbed grief reactions among bereaved Ukrainians? Therefore, the study will examine the following components:

H1: It is expected that the cause of death will significantly impact the severity of grief reactions among bereaved Ukrainians.

H2: It is expected that bereaved Ukrainians who have lost a loved one due to war-related causes will report greater disturbed grief reactions than bereaved Ukrainians who have lost a loved one due to non-war-related causes.

H3: It is expected that bereaved Ukrainians whose loved one has disappeared will report greater disturbed grief reactions than bereaved Ukrainians who have lost a loved one due to non-war-related causes.

H4: It is expected that bereaved Ukrainians who have lost a loved one by murder or manslaughter related to the Russian war will report greater disturbed grief reactions than bereaved Ukrainians who have lost a loved one due to non-war-related causes.

H5: It is expected that bereaved Ukrainians who have lost a loved one by suicide will report greater disturbed grief reactions than bereaved Ukrainians who have lost a loved one due to non-war-related causes.

Methods

This present study aims to examine the effects of the cause of death in relation to the nature and severity of grief reactions of bereaved Ukrainians. For this purpose, the Traumatic Grief Inventory-Self Report Plus (TGI-SR+) was used to measure the characteristics of PGD. The study was approved by the Behavioural, Management, and Social Sciences (BMS) Ethics

Committee of the University of Twente. The ethical approval number is 221111. All collected information was anonymised.

Participants and procedure

752 people participated in the online study survey. The inclusion criteria encompassed being 18 years or older, being Ukrainian, and having lost a loved one. Those not meeting these requirements were excluded from participating in this study.

Participants were recruited through snowball sampling, social media, and with the help of posters. The social media posts consisted of a brief description, link, and picture with a QR code and were spread on Instagram and various Ukrainian social media groups (Appendix A). Using social media as a recruiting technique for Ukrainian individuals during the war has been proven effective by other studies since it enables communication with Ukrainian refugees and migrants (Kolly-Shamne, 2022). The same advertisement was used for posters distributed in local refugee shelters.

Through either the link in the social media post or poster, the participants were led to the initial webpage (Вимірювання горя) and Grief Measurement Questionnaire. The webpage consisted of a brief paragraph about measuring grief, describing the grief scale and background of the study. Further, it included general information about the Grief Measurement questionnaire, information about privacy and data usage, and voluntary participation with which the participant could familiarise themselves before participating in the study (Appendix B). This included a description of what the participants will be expected to do in the Grief Measurement study, such as providing voluntary consent and feedback following the first part of the study.

The Grief Measurement could also be reached by scanning the QR code on the advertisement. Participants were presented with a brief description of the survey study and a consent form. Afterward, consenting to participate in the study, demographic information was documented. The demographic information included questions about their gender, age, whether they fled their house, cause of death of the loved one, date of their death, and relationship to the person (Appendix C). This was followed by the TGI-SR+ questionnaire with short follow-up feedback about their grief levels. After agreeing to the usage of their data, the participants were able to proceed with eight further questionnaires concerning their mental health. Qualtrics was used to create the online survey study.

Measures

Traumatic Grief Inventory - Self Report Plus (TGI-SR+)

The TGI-SR+, based on Lenferink et al. (2022) measures the criteria set of PGD by combining the criteria of the DSM-5-TR and ICD-11, resulting in 22 items (Appendix D). Twelve items were used to measure the PGD criteria of the DSM-5-TR: items 1-3, 6, 8-11, 13, 18, 19, and 21. Thirteen items were used to measure the ICD-11 PGD criteria: items 1-3, 5, 8-10, 13, 16, 19-22. Some examples of the used items are: “I had trouble accepting the loss.”, “I felt emotionally numb” or “I felt that life is unfulfilling or meaningless without her/him”. The participants were asked to rate their grief experiences from the past months in response to the death of their loved one on a five-point Likert scale, ranging from 1 (*never*) to 5 (*all the time*) on every item. Reliability analysis showed high reliability on the scale ($\alpha = .91$).

The responses on the item scores were summed to obtain the grief measure. The higher the score, the higher the level of disturbed grief reactions. Further, participants were grouped into four categories based on their TGI-SR+ scores (Appendix E). The cut-off score using the total scores for meeting the clinical criteria for PGD according to the DSM-5-TR and ICD-11 was ≥ 71 (Lenferink et al., 2022).

Posttraumatic Stress Disorder Checklist (PCL-5)

Further, the PCL-5 was used to determine the convergent validity of the TGI-SR+ as the PCL-5 measures PTSD, a related disorder to PGD. For the purpose of this study, only items 2, 3, 6, 7, 17, and 18 were used as they operationalised PTSD according to the ICD-11 (Appendix F). The PCL-5 measures the symptoms of PTSD on a five-point Likert scale, ranging from 0 (*not at all*) to 4 (*extremely*). The item scores of the PCL-5 scale demonstrated a high correlation ($\alpha = .72$). In line with systematic reviews, a strong positive association between the summed items' scores was expected (Lenferink et al., 2022).

After the participants agreed to continue the study, the following eight questionnaires were administered: PCL-5, Patient Health Questionnaire-9 (PHQ-9), Harvard Trauma Questionnaire (HTQ), Post-migration living difficulties checklist (PMLD), Moral Injury Appraisals Scale (MIAS-9), Mental Health Continuum-Short Form (MHC- SF), Received support, and Insomnia Severity Index (ISI). The questionnaires were translated into Ukrainian with the help of a Ukrainian translator psychologist.

Data Analysis

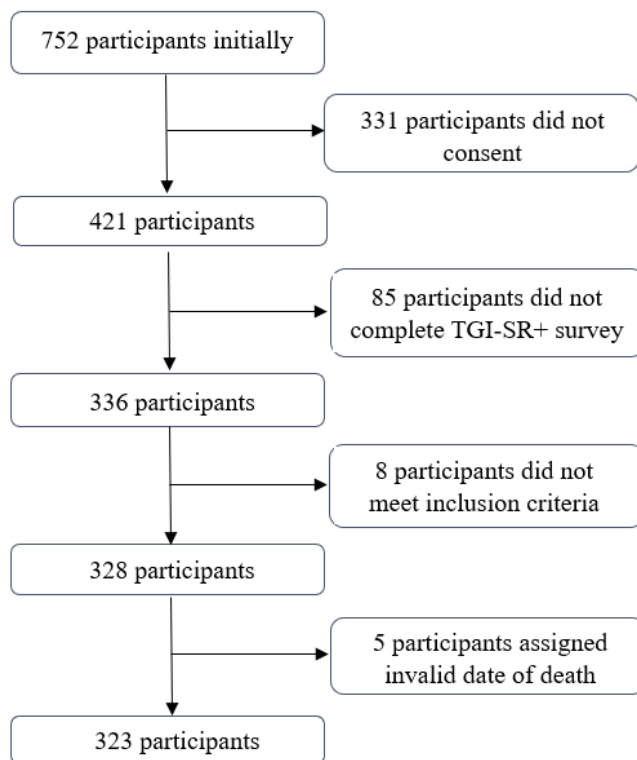
The statistical software R-studio (Version 2023.03.1) was used to analyse the collected data. The data pool was adjusted after screening for data that was missing or did not fit the requirements. Then, the parametric assumptions were tested. Afterward, a scale reliability analysis was performed. Convergent validity was also examined through the comparison of

the TGI-SR+ and PCL-5. Further, descriptive statistics were used to examine and compare the participants' data. First, participants were grouped according to the cause of death of their loved one. Afterward, a one-way ANOVA was used to compare the mean scores of PGD in the different cause-of-death groups to test the first hypothesis. Two more one-way ANOVAs were performed to examine for each criterion set the mean PGD scores according to the DSM-5-TR and ICD-11 the difference in cause-of-death groups. After a significant difference in the experience of PGD between the groups was found, a post hoc test was performed to test the second hypothesis by examining the greatest differences between the different causes of death groups and PGD.

Results

Descriptive statistics

The sample used to examine the differences and the effect of the cause of death on disturbed grieving consisted of initially 752 participants. However, 429 (57%) participants were excluded from the study of which 331 (44%) did not provide consent for their data to be used. Further, 85 (11%) participants did not complete the TGI-SR+ questionnaire, eight (1,3%) did not meet the inclusion criteria, and five (0,6%) were excluded due to assigning the date of death extending the 1st of May 2023, resulting in a total of 323 participants. Figure 1 shows the participants' flow chart.

Figure 1*Participants Flow Chart*

Therefore, the sample group consisted of 10 males (3,1%), 305 females (94,4%), and 8 differently identifying (2,5%) participants. The average age of the participants was 33 years, presenting an age range from 18 to 61 ($SD = 7.38$). On average, the time since the loss occurred was 11 months, while the earliest reported death was 29 years ago. However, the most recent death occurred in April 2023. Moreover, 198 deaths were reported since the war started, 110 since the Crimean Invasion, and 16 prior to that time. More than half of the participants had stayed in Ukraine, while approximately one-third fled to another country. Further, 1 in 3 Ukrainians were mourning the loss of their parent. Approximately half the losses were due to physical illness. Table 1 indicates the number and percentage of distribution across the participant characteristics. Further, the Pearson correlation is .60, thus demonstrating strong positive convergent validity between the TGI-SR+ and PCL-5 scales in this study (Lenferink et al., 2022).

Table 1*Participants Characteristics*

Demographic	N (%)
Migration	
Stayed	183 (56,66%)
Fled their house and live somewhere else in Ukraine	44 (13,62%)
Fled to another country	96 (29,72%)
Kinship	
Partner	57 (17,65%)
Child	25 (7,74%)
Parent	108 (33,44%)
Sibling	26 (8,04%)
Grandparent	45 (13,93%)
Friend	33 (10,21%)
Other	29 (8,97%)

On average, the total score of the PGD assessment was 68 ($SD = 15.17$). With this total score, the average participant was in the upper quarter of the yellow category, indicating a heightened grieving experience, however not yet disturbed. Nearly half of the sample group was placed in this category ($N = 154$, $M = 61.93$, $SD = 6.76$). 34 participants were placed in the green category ($M = 39.94$, $SD = 6.88$), thus not showing any disturbed grief reactions. However, 120 participants were in the orange category ($M = 80.05$, $SD = 5.64$), showing increased PGD scores. The red category defining the most severe grief reactions was assigned to 15 participants ($M = 96$, $SD = 3.53$). Therefore, 41,7% of the participant sample may meet the DSM-5-TR criteria for PGD caseness.

Hypothesis testing

First, the parametric assumptions were tested and met (Appendix G). The data was examined for normal distribution of residuals, independence, and variance in residuals ($p = 0.104$). No influential values were detected, and therefore no outliers were removed.

The participants' mean scores of the prolonged grief disorder were examined in the different loss types. Participants who lost their loved one due to physical illness scored, on

average, the lowest ($M = 63.26$, $SD = 14.66$). Second, on the grieving measure was the group of participants that lost their loved one due to murder or manslaughter not-related to the Russian war ($M = 65.24$, $SD = 24.99$). Those who lost their loved ones by suicide scored on average 71.27 points on the grief measure ($SD = 15.58$). The average score on the grief measure for participants who lost their loved ones due to other reasons as those named was 72.61 ($SD = 15.68$). The third highest mean for the cause of death was found among participants who lost their loved one due to an accident ($M = 73.27$, $SD = 10.65$). The group of participants who had lost their loved one due to murder or manslaughter related to the Russian war was the second-highest average mean for the causes of death ($M = 74.01$, $SD = 14.2$). The highest average mean on the grief measure was found in the participant group of people whose loved ones had disappeared ($M = 75.61$, $SD = 15.68$). Further characteristics of the causes of death are reported in Table 2.

Table 2

Number, mean, and standard deviation of TGI-SR+ scores among the cause-of-death groups

Variable	N (%)	M	SD
Cause of death			
Physical Illness	173 (53.56%)	63.26	14.66
Accident	30 (9,29%)	73.27	10.65
Suicide	11 (3.4%)	71.27	15.58
Murder or manslaughter not related to the Russian war	4 (1.24%)	65.24	24.99
Murder or manslaughter related to the Russian war	79 (24,46%)	74.01	14.2
Disappearance	8 (2,47%)	75.12	13.04
Other	18 (5,57%)	72.61	15.68

Note. N means the total sample. M means the mean. SD means standard deviation. Rounded to two decimals.

In order to examine the effect of the different causes of death on prolonged grief, a one-way ANOVA was carried out. It revealed a significant difference in the grief scores among the six causes of death ($F(6,316) = 6.843, p < .001$). This supports the first hypothesis that the cause of death significantly impacts the grieving experience. To test the other hypotheses concerning the specific differences in grieving experience among the causes of death, a post hoc test was performed. The Tukey HSD test revealed the differences in the mean TGI-SR+ scores between the different causes of death. Only two significant differences were found. First, a significant difference was found between those who grieved the loss of a loved one due to murder or manslaughter related to the Russian war vs. physical illness ($p < .001$). This partially supports the fourth hypothesis, which expected an increased grieving experience of individuals who lost their loved one due to murder or manslaughter related to the Russian war compared to those who lost a loved one due to non-war-related causes. Surprisingly, a significant difference in the grieving scores among non-war-related causes of death was found. More specifically, this second significant difference was found in the grieving experience of the accident vs. physical illness sample group ($p = .009$). Even though the means of the grieving scores in the different causes of death initially indicated a dissimilarity, the post hoc test did not reveal any other significant differences. Therefore, no evidence to support hypotheses three and five were found.

Further, two more one-way ANOVA analyses were conducted to examine the effect of the cause of death for each PGD criteria set separately. The first ANOVA, which was based on the DSM-5-TR criteria set, yielded significant differences in the effect of the cause of death on the PGD scores according to the DSM-5-TR ($F(6, 316) = 6.726, p < .001$). This evidence supports the first hypothesis. A subsequent post hoc analysis revealed two significant differences in the grief scores between the seven causes of death. The first significant difference was found in the bereavement groups due to murder or manslaughter related to the Russian war vs. physical illness ($p < .001$). The second significant difference in grieving scores was revealed between the group of individuals bereaved due to accident vs. physical illness ($p = .005$). Therefore, this analysis yielded likewise evidence in favour of supporting hypothesis four and no evidence for hypotheses three or five, in comparison to the analysis of the combination of both criteria.

Another one-way ANOVA analysis was performed to examine the effect of the cause of death on PGD scores according to the ICD-11. Similar to the two previous analyses, a significant difference in the grieving experience between the different causes of death was found ($F(6, 316) = 6.2, p < .001$). Likewise, delivering evidence supporting the first

hypothesis. Further, the post hoc analysis again yielded a significant difference in grieving scores between the groups due to murder or manslaughter related to the Russian war vs. physical illness ($p < .001$) as well as between accident vs. physical illness ($p = .016$). Similarly, this again supports hypothesis four as well as provides no evidence in favour of hypotheses three or five.

Discussion

The goal of this study was to get a better understanding of the effect of the cause of death on disturbed grief reactions and establish a prevalence of PGD in bereaved Ukrainians. Therefore, six different causes of death were studied with a focus on war-related and unrelated causes. The causes included death due to physical illness, accident, suicide, murder or manslaughter unrelated to the war, murder or manslaughter related to the war, ambiguous loss due to disappearance, and others. The participants specified other causes of death as deaths in hospitals, psychiatries, child loss during labor, deaths during armed conflict as well as due to food and water shortage. It was expected that the cause of death would significantly impact the PGD of the bereaved community. It was also expected that PGD scores would be greater in war-related causes of death in comparison to non-war-related causes of death. More specifically, predictions were made about greater PGD among bereaved individuals who lost their loved ones due to disappearance, suicide, or murder or manslaughter related to the Russian war, in comparison to non-war-related causes.

This research study showed that 4 in 10 Ukrainians experience disturbed grief reactions that may qualify as an indicator of PGD. Although it establishes a relatively moderate prevalence of PGD among bereaved Ukrainians, it is still a great indication of acute distress in this community. This finding replicates other similar studies examining the prevalence of PGD among bereaved samples (Steil et al., 2019). The study of Steil et al. (2019) reviewed 14 studies based on non-violent bereavements, revealing that 1 in 10 bereaved individuals is at risk of developing PGD. However, our study demonstrates a four times higher prevalence suggesting that violent deaths further increase the risk of PGD. This is also in line with previously discussed literature (Steil et al., 2019; Kokou-Kpolou et al., 2020), which also suggests that the death of first-degree relatives yields higher PGD levels (Kokou-Kpolou et al., 2020). This might have also contributed to this moderate PGD prevalence in this sample as 1 in 3 Ukrainians were mourning the loss of their parent.

A strong correlation with PTSD has also been established in this study, suggesting that psychological suffering from the effects of war and bereavement in this group is significant. This replicates the findings of Craig et al. (2008), who established a strong correlation

between PTSD and PGD in a sample of Bosnian war refugees. In comparison to this sample, the high prevalence of PGD among mainly female Ukrainians may be partially explained by the greater risk of experiencing stressors during the migration or exposure to traumatic experiences, and therefore increase the risk of developing PGD.

Support has been found for the first hypothesis investigating the overall impact of the cause of death on disturbed grief. This means that the cause of death itself impacts the nature and severity of disturbed grief reactions. It also replicates the findings of many previously discussed studies (Lenferink et al., 2022; Doering et al., 2022; Kokou-Kpolou et al., 2020). Some literature suggests that sense-making of the death is associated with the impact of the cause of death on PGD severity (Currier et al., 2006). It has been shown that the cause of death may be associated with greater or smaller sense-making, which may mediate the severity of disturbed grieving (Currier et al., 2006). Possible explanations for the findings of this study are the unexpectedness (Doering et al., 2022), violence (Steil et al., 2019), or traumatic (Kokou-Kpolou et al., 2020) circumstances of the death, in line with previously discussed literature. A more specific examination of possible explanations for the specific causes of death will be discussed in more detail in the next section. Further, bereavement of communities from war-inflicted regions is often accompanied by traumatic experiences, before, during, or even after settling in a host country (Bogic et al., 2015; Osokina et al., 2022). All these factors may further contribute to the severity of PGD and the grieving process in this war-affected community.

The second hypothesis can only be partially supported by the findings as not all war-related causes of death had a greater impact on PGD, in comparison to non-war-related causes. More specifically, it cannot be confirmed that ambiguous loss due to disappearance, as well as death by suicide, led to a higher level of PGD among bereaved Ukrainians.

Evidence for the third hypothesis demonstrating an association between ambiguous loss and high levels of PGD has also been established. It revealed that on average participants whose loved ones disappeared had the highest PGD scores among all the causes of death. Similar findings have been reported by Comtesse et al. (2022), who also suggest that ambiguous loss may be a specific risk factor of PGD among refugees. However, no statistically significant difference in grieving compared to the other causes has been found. Although some literature suggests increased severity of PGD among bereaved individuals due to sudden loss (Lobb et al., 2010), other studies report greater severity of disturbed grief in sudden losses only if they are of a violent nature (Currier et al., 2006). Therefore, it cannot be confirmed with confidence that disappearance as the cause of death may severely impact

disturbed grieving leading to PGD when compared to non-war-related losses, but it shows that other underlying factors must play a role in determining the severity of grief.

The findings of this study support the fourth hypothesis, establishing greater severity of disturbed grief reactions among bereaved individuals due to war-related murder or manslaughter in comparison to non-war-related causes. This replicates Steil et al.'s (2019) findings, reporting that violent loss is associated with greater PGD levels compared to losses due to natural causes. In this sample, the second-highest average PGD levels in the cause-of-death groups have been reported by those bereaved due to murder or manslaughter related to the Russian war. Further, this can be attested by its significant difference in disturbed grieving in relation to physical illness, found in the sample. Research has shown that violent types of losses are often followed by trauma-specific symptoms, which increase psychological suffering (Currier et al., 2006). This may increase the risk of a disturbance in grieving. It can also be seen in this case, where violent losses due to murder or manslaughter related to the Russian war, as well as sudden losses such as due to disappearance, generated higher PGD symptoms. Interestingly, it cannot explain why this is not the case for violent loss due to murder or manslaughter unrelated to the Russian war, suggesting that the violent loss cannot solely account for the elevated severity of PGD and that other factors must play another mediating function. Therefore, this only partially accounts for the explanation of the findings.

No evidence was found for the fifth hypothesis. Surprisingly, no greater effect of death by suicide on PGD was found. Even though previous literature, such as Steil et al.'s (2019) and Lobb et al.'s (2010) findings, would suggest that due to its violent nature, an association with greater PGD may have been found. However, Doering et al. (2022) suggest that death by suicide can also be experienced as "expected" rather than sudden, based on the perception of the loved ones. This finding is also in line with the Durkheimian theory and replicates the findings of Aida's (2020) study, demonstrating lower suicide rates and effects among the civil-war-affected Sri Lankan community due to stronger social cohesion. This would be one possible explanation for these results and indicate further underlying factors affecting the moderation of PGD severity.

When examining the other causes of death not related to the war, significant differences in the severity of grieving among bereavement due to accidents and physical illness have been found. This once again suggests that the violent nature of death may increase the risk of developing PGD (Steil et al., 2019; Kokou-Kpolou et al., 2020). Further, it is in line with previous findings demonstrating an increased PGD severity caused by bereavement due to accidents vs. natural causes (Lenferink et al., 2022). Even though death

due to natural causes may sometimes also be of sudden nature similarly to bereavement by accidents, most studies show diminished disturbed grieving reactions in individuals facing natural losses. This further suggests that the emotional regulation, surrounding circumstances of the death, and coping differ significantly for those bereaved by natural losses.

Limitations

However, the results may be approached with caution. One limitation of this study is that although a great number of participants initially responded to the survey, approximately half of the respondents needed to be omitted from participation due to the incompleteness of the survey, lack of consent for the usage of their data, or not meeting the inclusion criteria. This could have also led to the over-representation of female participants, as they made up the majority of the sample. This, therefore, does not allow for insight into the nature and experience of grieving male or other-identifying participants, since they only make up about 5,6% of the sample. A greater number of female participants may be explained by them being more probable to experience a loss during times of war since a lot of male relatives stay behind. Therefore, this study cannot account for gender differences in disturbed grieving.

It may be advised to use another sampling technique to ensure a proper representation of the sample in future studies. Naturally, a greater number of female participants can be expected in these kinds of studies. However, recruitment through stratified sampling may increase the representativeness of the sample population and aid in examining the grieving experience in bereaved non-female individuals.

For future research that involves a great number of assessment surveys, it should be considered how to keep the participants engaged and stress the importance of the research. It can be helpful to demonstrate the importance of the participant's commitment and how they may eventually benefit from it, to prompt greater willingness to consent to the usage of data as well as completing the survey.

Another limitation is the unequal division among the causes of death. Although the cause of death cannot be screened for easily, an unequal distribution impairs a solid comparison of less-represented types of losses and the examination of their effect on grieving. Further, it is difficult to distinguish the effects of war itself as a stressor on the experiences of the participants and how they interpret the cause of death since a lot of the involved factors are interrelated.

This limitation can also be addressed using stratified sampling. Grouping participants according to the cause of their bereavement may reduce an underrepresentation as well as increase the possibility of adequately examining and comparing their grieving experience.

Strengths

What showed to be of great advantage for this study is the diverse form of participants' recruitment. The different ways of recruiting participants, including through both digital channels and physical material, yielded a great number of participants. The great sample size ensures greater reliability and robustness for various analyses. Further, the sample size and participants' characteristics, such as appropriate age, loss, and Ukrainian origin, demonstrate that the study reached the intended target population. Therefore, this method of data collection was beneficial for this study as many Ukrainians migrated and could therefore access and spread the questionnaire via digital channels.

Moreover, what proved to be another strength of this study is its structure. The first part of the study was made up of the TGI-SR+ questionnaire, examining the grief reactions, and providing the participants with feedback based on their disturbed grief score. Afterward, the participants were able to decide if they want to continue with the study. This enabled them to first reflect on their experience and whether they should consider seeking help. Granting them this first feedback on their grief reactions is essential in order to actually support the Ukrainian community in elevating their distress.

Further, the novelty of this research allows for gaining a first understanding of the experience of bereaved Ukrainians and may aid in raising awareness of the necessity to provide psychological support to this community. With the help of validated questionnaires, a first prevalence of PGD was established for this sample. Further, diversifying the application of the TGI-SR+ by applying it to a Ukrainian-speaking sample aids in the exploration of disturbed grief reactions across this community.

Practical implications and future directions

Further, it can be valuable to gather information about prior history of mental illness to control for this risk factor and assess its possible contribution to disturbed grieving. It can be helpful to consider the role of violence, sense-making or individual interpretation of the loss when examining the impact of the cause of death on PGD to further deepen the understanding of its underlying factors and nature. Understanding whether sense-making may depend on certain causes of death or how both operate regarding grieving, will prove helpful in targeting the emotional needs of mourning individuals.

The prevalence and indications of PGD among bereaved Ukrainians showing acute distress experienced in this community stress the urgency of adequately providing psychological and social support. This group is very vulnerable to many risk factors for PGD such as migration stressors, gender, and traumatic experience, as well as other similar

psychologically distressing conditions. Proper care and support need to be ensured to address these symptoms. Therefore, it is crucial to spread awareness primarily in refugee centers which usually are the first place of residence for many immigrating Ukrainians. Other facilities such as governmental organisations supporting incoming Ukrainians, practitioners, and welfare institutions should also be sensitised to the potential high emotional and psychological distress of this community. On the one hand, it would make the workers within such facilities more sensitive to the signs and struggles that the Ukrainian society is facing. This would support the early detection of signs and the provision of adequate support which is crucial to target the affected individual. On the other hand, it would promote contact points to elevate psychological distress and eventually empower affected individuals to get the needed support in processing their experiences. Acknowledging the different effects that the cause of death may have on the severity of PGD, or its development can be crucial to addressing the emotional needs and distress the individual is facing. Examining the effect of the cause of death can reveal underlying mechanisms and needs that must be addressed to diminish disturbed grieving. Therefore, it is of great importance to continue studying this subject area.

Conclusion

This study stresses the importance of adequate psychological support for conflict-affected individuals in processing their bereavement. The high prevalence of PGD among bereaved Ukrainians shows the great distress they are facing. The findings revealed that the cause of death does impact the severity of PGD, with special regard to bereavement caused by murder or manslaughter related to the Russian war. However, not all causes had the same impact on PGD. Sudden violent losses such as these reveal underlying factors to the causes that can increase the severity of PGD. Therefore, it remains crucial to continue research on this relationship. Knowing this, measures addressing the emotional needs underlying some of these causes can be taken to support a healthy and normal grieving process. Further, support during migration, settling, as well as for locals remaining in the conflict-affected regions of Ukraine needs to be provided to diminish the psychological and emotional distress of this highly vulnerable community. Reducing these will simultaneously address the risk factors and decrease the probability of developing PGD.

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Appendix

Appendix A

Social media advertisement in Ukrainian

**ПЕРША ДОПОМОГА ПІД ЧАС
ЖАЛОБИ ДЛЯ УКРАЇНЦІВ**

Ви втратили когось близького? Чи хотіли би Ви знати більше про свою реакцію? Тоді, заповніть, будь ласка, онлайн опитувальник. Більш детальну інформацію Ви можете знайти на сайті www.Вимірюваннягоря.com

ВИМОГИ

- Мати українське громадянство
- Вік від 18 років
- Втрата близької людини (партнер, член родини або друг)

ЯКЩО У ВАС Є ПИТАННЯ СТОСОВНО ДОСЛІДЖЕННЯ, ЗВЕРТАЙТЕСЬ ДО
M.L.F.RISPAHOY05@UTWENTE.NL

ВІДСКАНУЙТЕ QR-КОД ТА ПРИЙМІТЬ
УЧАСТЬ У НАШОМУ ДОСЛІДЖЕННІ




UNIVERSITY OF TWENTE.  Utrecht University 

Social media advertisement in English

**FIRST AID IN MOURNING FOR
UKRAINIANS**

Would you like to know more about your own reactions to a loss of a loved one? Then please complete the online questionnaire to learn more about your grief process.

For more information go to the website of the project
www.Вимірюваннягоря.com

REQUIREMENTS

- Being Ukrainian
- Aged 18 years or older
- Having lost a loved one (family member, friend, partner)

FOR QUESTIONS REGARDING THE RESEARCH CONTACT
M.L.F.RISPAHOY05@UTWENTE.NL

Scan the QR code and participate in our research




UNIVERSITY OF TWENTE.  Utrecht University 

Appendix B

Figure 1

Webpage material in Ukrainian

rouw behandelung +

Rouw na verkeersongeval

Rouw na moord

Rouw zonder afscheid

Leven met vermissing

Rouw en kinderen

Rouw na zelfdoding

Rouw na ramp

Meer

Q

Вимірювання горя

«Вимірювання горя» – це опитувальник, який допоможе вам зрозуміти природу та інтенсивність вашої реакції на втрату. Опитувальник розробили Лоннеке Ленферінк і Пол Бухен (разом з колегами), які пов'язані з університетами Гронінгена, Утрехта та Твенте в Нідерландах. Переклад був зроблений за допомогою українських психологів. Після того, як ви заповните «Вимірювання горя» ви автоматично отримаєте свій результат та короткий зворотний зв'язок до нього.

.....

[Перейти до Вимірювання горя →](#)

Rouwmeter

Figure 2

Webpage material in English

rouw behandelung +

Mourning after traffic accident

Mourning after murder

Mourning without goodbye

Living with missing

Grief and children

Mourning after suicide

Mourning after disaster

More

Q

Measuring grief

The Grief Scale is a questionnaire to help you understand the nature and intensity of your reaction to a loss. The questionnaire was developed by Lonke Lehnferink and Paul Buhlen (along with colleagues) who are affiliated with the universities of Groningen, Utrecht and Twente in the Netherlands. The translation was made with the help of Ukrainian psychologists. After you complete the "Grief Measurement" you will automatically receive your result and a short feedback on it.

.....

[Go to Grief Measurement →](#)

Rouwmeter

Appendix C

Questionnaire about the demographic information of the participants with the response possibilities in English

	Question	Answer
Consent	We might be interested in how people adapt to the loss of a loved one over time. Could we approach you again in the future to inform you about follow-up studies?	No Yes, my email is
Data pool	I have read and understood the information about this study. I agree to participate in this study.	Yes
Gender	What is your gender?	Man Woman Other
Age	What is your age (in years)?	
Migration	Did you flee your house because of the Russian war?	No Yes, I fled my house and live somewhere else in Ukraine Yes, I fled my house and now live in another country. Name of country is:
Cause of death	What is the cause of the loss of your loved one?	Physical illness (e.g. old age, cancer, cardiovascular disease, died at birth) Accident (e.g., accident, traffic accident, drowning, poisoning) Suicide Murder or manslaughter not related to the Russian war Murder or manslaughter related to the Russian war Disappearance Other:

Text	The following questions are phrased in a way that it refers to the "death" of your loved one. Keep in mind that in your case, the questions are referring to the disappearance of your loved one. **	
Date of Death	What is the date your loved one died? (dd/mm/yyyy)	
Kinship	What is your relationship with the deceased loved one? The loved one is my:	Partner (Husband, wife, boyfriend, girlfriend) Child Parent Sibling Grandparent Grandchild Friend(s) None of the above:
Reminder	Some of the questions are phrased in a way that it refers to the "death" of your loved one. Keep in mind that in your case, they are referring to the disappearance of your loved one. **	

Appendix D*TGI-SR+ questionnaire in English and Ukrainian*

English	Ukrainian
<p>Below, several grief - reactions are listed. Please indicate how often you have experienced each reaction in the past month, in response to the death of your loved one</p>	<p>Нижче наведено декілька реакцій горя. Вкажіть, як часто ви переживали ці реакції після смерті близької людини протягом останнього місяця. Якщо ви пережили численні втрати, то сфокусуйтеся на тій втраті, яка найчастіше вас турбує та/або найбільше засмучує в даний час</p>
<p>1 = never 2 = seldomly 3 = sometimes 4 = frequently 5 = all the time</p>	<p>1 = Ніколи 2 = Рідко 3 = Іноді 4 = Часто 5 = Завжди</p>
<p>1. I had intrusive thoughts or images related to the person who died.</p>	<p>1. В мене були небажані та раптові думки або образи пов'язані з людиною, що померла.</p>
<p>2. I experienced intense emotional pain, sadness, or pangs of grief.</p>	<p>2. Я відчував(ла) сильний емоційний біль, сум або страждав(ла) від напливів горя.</p>
<p>3. I found myself longing or yearning for the person who died.</p>	<p>3. Я тужив (ла) та відчував(ла) скорботу за померлим.</p>
<p>4. I experienced confusion about my role in life or a diminished sense of self.</p>	<p>4. Я відчував(ла) невизначеність щодо своєї ролі в житті або відчував(ла) втрату власного Я.</p>
<p>5. I had trouble accepting the loss.</p>	<p>5. Мені було важко прийняти втрату.</p>
<p>6. I avoided places, objects, or thoughts that reminded me that the person I lost had died.</p>	<p>6. Я уникав(ла) місць, предметів або думок, що нагадують мені про те що він/вона помер(ла).</p>
<p>7. It was hard for me to trust others.</p>	<p>7. Мені було важко довіряти іншим.</p>
<p>8. I felt bitterness or anger related to his/her death</p>	<p>8. Я відчував(ла) гіркоту або гнів через його/її смерть.</p>
<p>9. I felt that moving on (e.g., making new friends, pursuing new interests) was difficult for me.</p>	<p>9. Я відчував, що жити далі (наприклад, знаходити нових друзів, шукати нові інтереси) мені важко.</p>

- | | |
|--|---|
| 10. I felt emotionally numb. | 10. Я відчував(ла) себе емоційно онімілим(ою). |
| 11. I felt that life is unfulfilling or meaningless without him/her. | 11. Я відчував(ла), що життя втратило сенс безглузде або порожнє без нього/неї. |
| 12. I felt stunned, shocked, or dazed by his/her death. | 12. Я був(ла) приголомшений(а), шокований(а) або вражений(а) його/її смертю. |
| 13. I noticed a significant reduction in social, occupational, or other important areas of functioning (e.g., domestic responsibilities) as a result of his/her death. | 13. Я помітив(ла), що моє функціонування (в соціальній, професійній та інших важливих сферах життя) було серйозно порушено в результаті його/її смерті. |
| 14. I had intrusive thoughts and images associated with the circumstances of his/her death. | 14. У мене були небажані та раптові думки і образи, пов'язані з обставинами його/її смерті |
| 15. I experienced difficulty with positive reminiscing about the lost person. | 15. У мене були труднощі з позитивними спогадами про покійного(у). |
| 16. I had negative thoughts about myself in relation to the loss (e.g., thoughts about self-blame). | 16. В мене були негативні думки про себе, у зв'язку з втратою (наприклад, самозвинувачення). |
| 17. I had a desire to die in order to be with the deceased. | 17. В мене виникало бажання померти, щоб бути з покійним. |
| 18. I felt alone or detached from other individuals. | 18. Я відчував(ла) себе самотнім(ньою) та відірваним(ною) від інших людей. |
| 19. It felt unreal that he/she is dead. | 19. Його/ її смерть здавалась мені нереальною. |
| 20. I put an intense blame on others because of his/her death. | 20. Я дуже сильно звинувачую інших через його/її смерть. |
| 21. It felt as if a part of me had died along with the deceased. | 21. В мене було відчуття, ніби частина мене померла разом із покійним. |
| 22. I had difficulties experiencing positive feelings. | 22. Мені було важко переживати позитивні почуття. |
-

Appendix E

Feedback people get once they finish the Grief questionnaire (TGI-SR+)

Green category (22-47 points)

You currently score between 22-47 points. This puts you in the green category.

Sometimes you experience emotional pain or other emotional reactions to the loss of your loved one. But this does not significantly interfere with your everyday life. Experiencing grief reactions occasionally is a very common and healthy response to loss. You do not seem to need any professional help with the grieving process right now. Of course, you may check the general information on grief on this website.

Do you notice that your psychological complaints increase over time? Please fill out the questionnaire again.

Yellow category (48-70 points)

You currently score between 48-70 points. This puts you in the yellow category.

You sometimes experience several grief reactions. At this moment, it seems that there is no need to seek professional help for your grief. You may check the general information on grief on this website. If you do feel that you need help (because you notice an increase in your grief reactions) you can contact your family doctor for advice. You may also consider having some (online) counseling sessions with a counselor or psychologist.

Did the loss occur less than 12 months ago? Please fill out the questionnaire again in a while.

Or do you notice that you have other complaints that were not addressed in the questionnaire? Please contact your family doctor for advice.

Orange category (71-91 points)

You currently score between 71 - 91 points. This puts you in the orange category.

You often experience different types of grief reactions. These cause suffering and may interfere with your functioning. You may likely benefit from professional help from a psychologist. If you feel no need for professional psychological help, we advise you to consider having some (online) counseling sessions with a counselor or psychologist. It is also wise to consult your family doctor to share how you feel now and discuss whether help is needed

Did the loss occur less than 12 months ago? Please fill out the questionnaire again in a while.

Red category (92-110 points)

You currently score between 92-110 points. This puts you in the red category. There are many grief reactions that you experience almost always. This likely cause significant distress and likely interferes with your functioning. We strongly advise you to consider searching for options to obtain professional psychological help. It is also wise to consult your family doctor to share how you feel now and discuss whether help is needed. Did the loss occur less than 12 months ago? Please fill out the questionnaire again in a while

Appendix F*PCL-5 questionnaire in English and Ukrainian*

English	Ukrainian
<p>Below is a list of problems that people sometimes have in response to the lost of their loved one. Please read each problem carefully and then circle one of the numbers to the right to indicate how much you have been bothered by that problem in the past month.</p>	<p>Нижче наведено список проблем, які іноді виникають у людей у відповідь на втрату близької людини. Будь ласка, уважно прочитайте кожну проблему, а потім обведіть одну з цифр праворуч, щоб вказати, наскільки ця проблема вас турбувала протягом останнього місяця.</p>
<p>In the past month, how much were you bothered by:</p>	<p>За останній місяць, наскільки Вас турбували такі речі</p>
<p>0 = not at all 1 = seldomly 2 = sometimes 3 = frequently 4 = all the time</p>	<p>0 = Ніколи 1 = Рідко 2 = Іноді 3 = Часто 4 = Завжди</p>
<p>2. Repeated, disturbing dreams of the death of your loved one?</p>	<p>2. Повторювальні, тривожні сни про смерть близької людини?</p>
<p>3. Suddenly feeling or acting as if the death of your loved one was actually happening again (as if you were actually back there reliving it)?</p>	<p>3. Ви раптом відчували себе або діяли так, ніби смерть близької людини відбувається з Вами знову (начебто Ви «знову там» і переживаєте все наяву)?</p>
<p>6. Avoiding memories, thoughts, or feelings related to the death of your loved one?</p>	<p>6. Ви намагалися уникати спогадів, думок чи почуттів, пов'язаних зі смертю вашої близької людини?</p>
<p>7. Avoiding external reminders of death of your loved one (for example, people, places, conversations, activities, objects, or situations)?</p>	<p>7. Ви уникали зовнішніх нагадувань про смерть близької людини (напр., людей, місць, розмов, дій, предметів, ситуацій)?</p>
<p>17. Being “superalert” or watchful or on guard?</p>	<p>17. Перебували у стані «надмірної настороженості», пильності, напруженого очікування?</p>
<p>18. Feeling jumpy or easily startled?</p>	<p>18. Нервово реагували, легко лякалися?</p>

Appendix G

Graph 1

Normality of residuals

