The Relations between Well-Being, Prolonged Grief, Insomnia, and Moral Injury in a Group of Ukrainian Refugees

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Abstract

Introduction: As the Ukrainian refugee crisis has become an increasingly central topic in Europe, it is important to understand how the refugees' well-being is related to factors that can arise due to losing a loved one and fleeing from war. A growing body of evidence suggests that prolonged grief, insomnia, and moral injury are all important mental health issues which refugees struggle with. However, there is a lack of research on how these variables relate to each other in the context of refugees.

Methods: To investigate the relations between the variables well-being, prolonged grief, insomnia, and moral injury, a survey was conducted with 375 Ukrainian refugees, of which 77 met the criteria for this research. The analysis included descriptive statistics, correlations between all four variables, and mediation with well-being as the outcome variable, prolonged grief as the predictor variable, and insomnia as the mediator.

Results: The results showed a significant, negative relationship between prolonged grief and well-being ($r(77) = -.43$, $p<.001$) as well as insomnia and well-being ($r(77) = -.32$, $p = <.01$). Moral injury did not show significant correlations with any of the variables. There was a positive relationship between prolonged grief and insomnia ($r(77) = .45$, $p<.001$). There was no mediation effect of insomnia on the relationship between prolonged grief and well-being.

Discussion: The findings indicate that prolonged grief and insomnia relate to each other in the context of refugees which could be useful to consider for future interventions. As this study was the first one to examine moral injury and insomnia next to prolonged grief in refugees, future research should focus on longitudinal effects by also considering gender and cultural differences to gain more insight into how the variables relate to each other.

Keywords: Well-being, prolonged grief, insomnia, moral injury, mediation

Well-Being, Prolonged Grief, Insomnia, and Moral Injury

In 2022, the Russian Federation invaded Ukraine which was the starting point of an ongoing war until today. Due to the invasion, almost 8 million Ukrainian citizens had to flee their home country and seek refuge in other countries across Europe (UNHCR, n.d.). According to the UN Refugee Agency, citizens who have to leave their home country due to violence or conflict are considered refugees (UNHCR, n.d.). This process includes uncertainty, separation from their home and adaptation to living in refugee housing, which can all have a negative effect on the refugees´ level of well-being (Walther, et al., 2020). Thus, refugees are considered to be a highly vulnerable part of the population as the war and fleeing from it can lead to trauma and a high risk to develop mental illnesses (Bajaj & Stanford, 2022). Besides the challenges caused by the displacement, losing a loved one due to the war is also an important factor to consider when it comes to the refugees´ well-being. In the context of Ukrainian refugees, the Russian invasion of Ukraine led to the death of more than 200.000 people (Nagourney, et al., 2023). Experiencing this type of loss can lead to symptoms of prolonged grief and lower well-being (Lenferink, et al., 2019).

Well-Being

According to the World Health Organization, well-being can be defined as a general way of being instead of only the absence of disease (WHO, n.d.). The American Psychological Association defines this state as “a state of happiness and contentment, with low levels of distress, overall good physical and mental health and outlook, or good quality of life.” (APA, n.d.). Keyes (2002) distinguishes between two dimensions, namely mental health, and mental disorder. The mental health dimension indicates well-being, whereas the existence or absence of psychopathology is part of the mental disorder dimension (Keyes,

2002). As for the operationalization of mental health, Keyes (2002) combined emotional, social, and psychological well-being.

Emotional well-being can be categorized as more subjective since it focuses on the life satisfaction and general level of happiness (Langeland, 2014). Psychological well-being focuses more on the development and the challenges in life, such as personal growth or purpose (Ryff, 1989). The third dimension, social well-being, includes how an individual functions in his or her social life based on social actualization or social acceptance (Keyes, 1998, 2002). It is possible to measure an individual´s overall level of well-being by taking the three dimensions together (Keyes & Annas, 2009). Furthermore, Huppert (2009) adds that a valuable predictor of well-being is effective functioning. He includes that there are factors which are essential to effective functioning, such as developing one´s own potential and having control (Huppert, 2009).

Especially when it comes to the legal processes, the refugees have little to no control about what will happen to their status in future (Krämer & Fischer, 2019). Furthermore, a study conducted by Peconga and Høgh Thøgersen (2020) found that refugees are more likely to suffer from mental disorders compared to a group without experiences of displacement. According to research, there is indeed a correlation between fleeing from war and developing mental health problems which can stay present in the long-term (Scogli & Salhi, 2021). Kirmayer et al. (2011) support these findings by including the negative effect of stressors, which refugees have to encounter at all stages of the migration, on their well-being. Stressors can include violence, postmigration, and the loss of loved ones (Aoun, et al., 2018).

Prolonged Grief

Several literature reviews demonstrated that the latter, loss of loved ones, can be overcome by most of the refugees due to their level of resilience or the social support they receive from their community (Chan et al., 2016; Siriwardhana et al., 2014). However, there is a lack of knowledge when it comes to the group of refugees who suffer from pathological grief and are not able to process the loss (Kokou-Kpolou et al., 2020). In previous research, the focus has mostly been on disorders related to trauma in refugee groups. Thus, there is a gap in research when it comes to the loss of a loved one and the prolonged grief which is accompanied by it.

A new diagnosis related to grief has been included into the 11th edition of the International Classification of Diseases (ICD-11) which came into effect in 2022 (Killikelly & Maercker, 2018). Prolonged grief disorder includes symptoms which can arise after the loss of a loved one, whereby the loss must have occurred at least a year ago (APA, 2022). The symptoms include emotional numbness, intense loneliness, and seeing no purpose in life. The identity of the individual can be disrupted which can be accompanied by difficulties in having a social life and pursuing daily activities. A preoccupation with the loss can be caused by symptoms such as disbelief or avoidance. A final symptom is the high level of intensity in which the individual experiences emotional pain such as anger (APA, 2022). According to one systematic review targeting refugees and their experiences with bereavement, prolonged grief disorder had a prevalence of 33.2%, which can be seen as high compared to groups who did not experience displacement. This high prevalence can have damaging effects on the refugees´ level of well-being (Lacour, et al., 2020). Thus, prolonged grief is an important factor to consider when it comes to the well-being of refugees.

Additionally, prolonged grief can have an effect on the refugees´ sleep quality. Refugees who experience symptoms of prolonged grief disorder may show difficulties regarding the onset and maintenance of sleep, which might be caused by ruminating about the loss (Hardison, Neimeyer & Lichstein, 2005).

Insomnia

Previous studies have found that sleep disturbances are a common occurrence in bereaved people. For instance, people who suffer from prolonged grief have reported poor sleep quality and sleep disruption (Monk, et al., 2008). The poor quality and quantity of sleep and the lack of ability to fall or stay asleep are all characteristics of insomnia (Buysse, 2013). However, research indicated that treating prolonged grief disorder was not sufficient to increase the sleep quality, which might suggest that insomnia is at least partly independent of prolonged grief in the context of bereaved people.

This being said, refugees might already be at risk for developing insomnia according to the 3Ps model, which is based on Spielman´s theory, and constitutes predisposing, precipitating, and perpetuating factors (Ellis, et al., 2021). These factors are frequently present in groups of refugees and are found to impact their well-being negatively (Richter, et al., 2018). An example for predisposing factors is the heritability of insomnia traits as this has been estimated to account for 31% to 58% of the probability of developing insomnia (Gehrman, et al., 2013). Precipitating factors for insomnia in the context of refugees include the process of migration from the home country and the integration in a new country (Richter, et al., 2020). Perpetuating factors contribute to the continuation of the sleep disturbances and can range from displacement and uncertainty to strong emotions such as grief (Ellis, et al., 2021).

According to a previous study, sleep disturbances were more likely to be displayed by participants with higher levels of traumatic symptoms. It was found that insomnia mediated the effect of traumatic symptoms on mental health complaints (Secosan, et al., 2020). This suggests that traumatic symptoms affect the level of insomnia, which in turn affects the mental health complaints.

All in all, insomnia is an important factor to consider in the context of refugees´ well-being and prolonged grief since it can influence the development and continuation of mental health problems and disorders (Pigeon, et al., 2017).

Moral Injury

Another factor to consider, when focusing on refugees who have lost a loved one in the context of war, is moral injury. Moral injury can be defined as a violation to a person´s moral or ethical code which threatens their beliefs and trust (Williamson, et al., 2021). Additionally, moral injury includes intense feelings of shame and guilt (Litz, et al., 2009) and it was further described as a crucial concern for the public health (Williamson, et al., 2021). Even though moral injury has gained more attention over the past few years, there is still a limited amount of studies concerning moral injury among refugees (ter Heide, & Olff, 2023). According to the latent profile analysis conducted by Hoffman et al. (2019), transgressions could be linked to stressors, which are caused by the migration, and a higher level of psychopathology. Another study found that the refugees expected safety at the place they fled to but were faced with stressors such as violence or powerlessness. This caused a damage to their deeply held trust in others and beliefs which can be identified as moral injury (Passardi et al., 2022). Furthermore, it was found that moral injury can have a negative effect on well-being and the onset of health complaints, such as insomnia (Hall, et al., 2022).

Based on previous research, prolonged grief and moral injury might interact with each other in the context of refugees. Moral injury could be seen as a contributor to the continuation of prolonged grief after the loss of a loved one (Hall, 2023). On the other side, prolonged grief is described to influence moral injury, more specifically the guilt that is accompanied by it (Jones, 2020). These interactions can be taken into account for the treatment of refugees who suffer from prolonged grief as moral injury would be tackled as well. This could lead to the improvement of their functioning in life, including their well-being and sleep (Simon, et al., 2018).

Well-Being, Prolonged Grief, Insomnia, and Moral Injury

A growing body of evidence suggests that well-being, prolonged grief, insomnia, and moral injury are all important aspects to consider in regard to refugees who had to flee their home country and lost a loved one due to the war. However, there is a lack of research on how these different variables relate to each other in the context of refugees.

Thus, there is a need for further exploration on the variables themselves but also how they relate to each other in a group of refugees.

Current Paper and Target Group

The current paper investigates the correlations between the variables well-being, prolonged grief, insomnia, and moral injury in a group of Ukrainian refugees. Furthermore, the aim is to investigate if there are any mediation effects for the relationship between prolonged grief and well-being when insomnia is included as a mediator to gain a more in depth understanding of the relations. Based on the research findings, it will be possible to come up with recommendations for future research in order to gain more insight.

Additionally, recommendations can be made on how to support refugees by considering their levels of prolonged grief, insomnia, or moral injury and adjusting the interventions accordingly in order to increase their levels of well-being.

Research Question and Hypotheses

The research question for this study is: "What is the relation between well-being, prolonged grief, insomnia, and moral injury?". The following hypotheses were formulated to answer the research question:

Hypothesis 1: "There is a negative relationship between the variables prolonged grief, insomnia, moral injury, **and** well-being in refugees."

Hypothesis 2: "There is a positive relationship between prolonged grief and insomnia in refugees."

Hypothesis 3: "Insomnia mediates the relationship between prolonged grief and well-being in refugees."

Previous research has indicated relations between moral injury and the above mentioned variables (also see hypothesis 1), but the nature and direction of these relations, and possible effects, is unclear. Therefore, the relation of moral injury with prolonged grief, insomnia, and well-being will be explored, and no hypothesis is formulated.

Methods

Design

This research used an online survey which measures the following variables in a group of Ukrainian refugees: prolonged grief disorder, post-traumatic-stress disorder, depression, pre-migration stressors, post-migration stressors, moral injury, well-being, psychological support, and insomnia.

Participants

The participants consisted of Ukrainian citizens who have experienced the death of a loved one. Further inclusion criteria were the access to Internet and sufficient Ukrainian or Russian language skills. The participants were mostly recruited via announcements in Telegram groups consisting of Ukrainian people, and other social media channels (LinkedIn, Facebook). Furthermore, organizations, which offer support to Ukrainian refugees, were contacted during the recruitment process. Lastly, a website has been developed (Вимірювання горя (rouwbehandeling.nl)) that included information about grief and bereavement care for Ukrainian bereaved people. The participants who filled out the survey on that website were asked permission to use their data for research purposes. In total, 375 participants between the ages of 12 and 61 took part in the survey. Based on the exclusion criteria, 298 participants were removed from the dataset due to missing values since those participants solely filled out the Traumatic Grief Inventory-Self Report questionnaire to find out their own grief score. In addition, participants who did not indicate that they had to flee their country due to the war had to be excluded since the target group are refugees. The final sample consisted of 77 participants between the ages of 19 and 53 of which 2 were male, 74 were female, and 1 identified as non-binary or preferred not to answer.

Procedure and Materials

The survey was created by using the Qualtrics software. The study was then submitted to the Ethics Committee of the University of Twente (NR) and approved for further distribution. The timeframe of the study was determined to be from 30.09.2022 until 30.09.2023. The participants were recruited by means of Telegram groups, social media channels, organizations, and a website specifically designed for the project. The participants took part in the survey in the online environment with no set time or date. To access the Qualtrics survey, participants needed to own a device with an internet connection, such as a laptop or a mobile phone. A consent form was included in the beginning of the survey with a brief description of the research and the conditions under which the participants could indicate their agreement or disagreement to take part in the study. The consent form was followed up by a demographics section, which included general questions about their age and gender. The survey itself consisted of self-report scales measuring prolonged grief disorder, post-traumatic-stress disorder, depression, pre-migration stressors, post-migration stressors, moral injury, well-being, psychological support, and insomnia.

Measures

This research paper focuses on the measures for well-being, prolonged grief, insomnia, and moral injury. All of the questionnaires were translated into Russian and Ukrainian.

Well-Being

Well-being was measured using the Mental Health Continuum-Short Form (MHC-SF; Lamers et al., 2011). This scale includes 14 items in total. It can be divided into three subscales, which are emotional well-being (3 items), social well-being (5 items), and psychological well-being (6 items). The scales are measured on a 6-point Likert scale (0 = never, 5 = everyday). Example items are: "During the past month, how often do you feel satisfied with life?" (emotional well-being), "During the past month, how often did you feel that you had something important to contribute to society?" (social well-being), and " During the past month, how often did you feel that your life has a sense of direction or meaning to it?" (psychological well-being).

By means of this scale, people can be classified as 'languishing' (= low level of mental wellbeing) and 'flourishing' (= high level of mental well-being) (Keyes, 2006). The score for the total scale ranges from 0 to 70, whereas the scores for the subscales differ from each other. Emotional well-being ranges from 0 to 15, psychological well-being from 0 to 30 and social well-being from 0 to 25. The higher a participant scores on one of the subscales, the higher their perceived level of well-being was during the past month (Keyes, 2009).

The reliability for each of the three subscales of the measure have all been high ($\alpha >$ .80) (Keyes, 2005). More specifically, the reliability values for the subscales of emotional well-being ($\alpha = 0.83$) and psychological well-being ($\alpha = 0.83$) are high and they are adequate for the subscale social well-being ($\alpha = 0.74$) (Lamers et al., 2011). The overall psychometric properties of the MHC-SF showed high internal reliability ($\alpha = 0.89$), as well as convergent and discriminant validity (Lamers et al., 2011).

Another study conducted by Luijten et al. (2019) also showed a high internal reliability (α = 0.91). Similarly, the Cronbach´s Alpha level in this sample showed excellent internal reliability (α = 0.92)

Prolonged Grief

Prolonged Grief Disorder was measured using the Traumatic Grief Inventory-Self Report (TGI-SR+) questionnaire (Lenferink, et al., 2022). The questionnaire includes 22 items which are measured on a 5-point Likert scale (1 = never, 5 = all the time) based on how often the participants have experienced each reaction in the past month, in response to the death of their loved one. Example items are: “I had intrusive thoughts or images related to the person who died.”, “I had trouble accepting the loss.”, and “I felt that life is unfulfilling or meaningless without him/her.”. The scores are added up to determine the final score and a higher score indicates a higher level of prolonged grief.

By means of this scale, the participants meet the DSM-5 criteria for prolonged grief disorder based on the items 1, 3, 13, 6, 9, 10, 11, 18, 19, 21, 2 and 8 and the ICD-11 diagnosis for the items 1, 3, 2, 5, 8, 9, 10, 16, 19, 20, 21, 22, and 13. It was found that the TGI-SR+ is a valid and reliable self-report measure with a good internal consistency (ω > 0.90) (Lenferink, et al., 2022). The Cronbach's Alpha level in this sample showed a high level of internal consistency (α = 0.92).

Insomnia

Insomnia was measured with the Insomnia Severity Index (ISI; Bastien, et al., 2001). The Insomnia Severity Index consists of 5 items and is measured on a 6-Point Likert-Scale (0 = not at all – 5 = very much).

An example item is “How satisfied/dissatisfied are you with your current sleep pattern?”. Another example is “How noticeable to others do you think your sleep problem is in terms of impairing the quality of your life?”.

Regarding the guidelines for scoring the measure, all of the scores are added up. Clinical insomnia with moderate severity can be diagnosed if the final score is between 15 and 21. Between 22 and 25, the final score can be interpreted as severe clinical insomnia. Concerning the psychometric properties, it can be said that the internal consistency was found to be excellent ($\alpha = 0.91$) (Morin, et al., 2011). In this sample, the internal consistency was found to be high ($\alpha = 0.77$).

Moral Injury

Moral injury was measured with the Moral Injury Appraisals scale which consists of 9 items (Nash, et al., 2013). The items are scored on a 4-point Likert-scale (1 = not at all, 4 = very much) based on how much the participants agree on each statement. Some of the example items include “I am troubled by morally wrong things done by other people”, and “I went against my own morals by failing to do something I should have done.”. The scores for each item are added up with 36 being the maximum score. The higher the total score, the higher the level of moral injury (Hoffman, et al., 2019). The psychometric properties of the questionnaire showed an excellent internal consistency ($\alpha = 0.90$) (Nash, et al., 2013). The Cronbach's Alpha level in this sample showed a high level of internal consistency ($\alpha = 0.86$).

Data Analysis

A general overview of the final dataset (N = 77) was created by looking for descriptive statistics, frequencies, and mean item scores. Thus, a possible floor or ceiling effect could be ruled out.

To test hypothesis one: “There is a negative relationship between the variables prolonged grief, insomnia, moral injury, **and** well-being in refugees.”, and hypothesis two: “There is a positive relationship between prolonged grief and insomnia in refugees.”, Pearson correlation coefficients were computed for all four variables in order to identify the relations between the variables. The outcome showed significant correlations between well-being, prolonged grief, and insomnia but there were no significant correlations with moral injury.

Based on this outcome, four regression analyses with prolonged grief as the independent variable were conducted for further testing of hypothesis three: “Insomnia mediates the relationship between prolonged grief and well-being in refugees.”. More specifically, a mediation analysis was performed by using the PROCESS macro command to test hypothesis three (Hayes, 2018.). The outcome variable for the analysis was well-being. The predictor variable for the analysis was prolonged grief. The mediator variable evaluated for the analysis was insomnia. Three more mediation analyses were run in the same manner for each of the subscales of well-being.

Results

Sample Characteristics

Table 1 shows the characteristics of the sample. Nine out of ten participants were female. The sample was on average in their early 30s and about half of the sample lost a loved one due to a natural cause. One out of four people lost their loved one because of homicide related to the war in Russia. The mean time since the loss was 2.3 years. The scores on the well-being, prolonged grief, insomnia, and moral injury scales were normally distributed.

Table 1

Characteristics of Participants in Sample (N = 77)

	Sample
Gender, N (%)	
Male	2 (3)
Female	74 (96)
Non-Binary/No Answer	1 (1)
Age, M (SD)	33.31 (7.14)
Cause of death, N (%)	
Natural Cause (e.g. illness)	43 (56)
Accident	5 (7)
Suicide	3 (4)
Homicide (not related to war with Russia)	1 (1)
Homicide (related to war with Russia)	18 (24)
Missing	4 (5)
Other	3 (4)
Time since loss in years, M (SD)	2.26 (3.42)
Well-being, M (SD)	42.39 (14.36)
Emotional Well-being, M (SD)	8.27 (3.46)
Social Well-being, M (SD)	14.09 (6.33)
Psychological Well-being, M (SD)	20.03 (6.64)
Prolonged Grief Disorder, M (SD)	71.79 (16.13)
Insomnia, M (SD)	20.33 (5.56)
Moral Injury, M (SD)	20.36 (6.49)

Correlation Analyses

Pearson correlation coefficients were computed to assess the linear relationships between the variables. There was a negative correlation between the two variables well-being and prolonged grief. Similarly, there was a significant negative correlation between insomnia and well-being. Finally, a significant positive correlation between prolonged grief and insomnia has been found. However, there was no significant correlation between moral injury and well-being. Additionally, there was no significant correlation between prolonged grief and moral injury or insomnia and moral injury.

Table 2

Correlations between Well-Being, the Subscales of Well-Being, Prolonged Grief, Moral Injury, and Insomnia

	r	1	2	3	4	5	6	7
1.overall wellbeing		1	.74***	.89***	.93***	-.43***	.07	-.32**
2.emotional wellbeing		.74***	1	.50***	.61***	-.48***	.05	-.25*
3.social wellbeing		.89***	.50***	1	.72***	-.32**	.14	-.26*
4.psychological wellbeing		.93***	.61***	.72***	1	-.36**	.00	-.31**
5.prolonged grief		-.43***	-.48***	-.32**	-.36**	1	.17	.45***
6.moral injury		.07	.05	.14	.00	.17	1	.04
7.insomnia		-.32**	-.25*	-.26*	-.31**	.45***	.04	1

Note. *Significant at <.05, **Significant at <.01, ***Significant at <.001

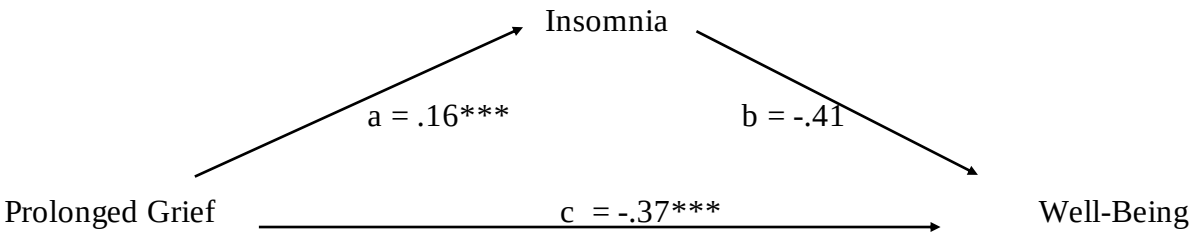
Examining the correlations between the three subscales of well-being and the other variables, it was found that moral injury did not show significant correlations with either of the three well-being subscales (Table 2). Prolonged grief showed significant correlations with all three of the subscales. However, the correlation between prolonged grief and emotional well-being was highly significant and resulted in a higher, negative correlation compared to the other two subscales. Similarly, insomnia significantly correlated with psychological well-being.

Mediation Analyses

To further investigate the significant results from the correlation analyses, a possible mediation effect of insomnia on the relationship between well-being and prolonged grief was tested (Figure 1). The outcome variable for the analysis was well-being. The predictor variable for the analysis was prolonged grief. The mediator variable evaluated for the analysis was insomnia.

Figure 1

Mediation Analysis



Note: This figure reports the standardized regression coefficients. ***Significant at <.001

First, the model for path c was significant, $F(1, 75) = 16.46$, $p < .001$, $R^2 = .18$. Thus, the direct effect of prolonged grief on well-being was negative and significant, b = -.37, t(75) = -4.06, p<.001, indicating that people who score higher on prolonged grief are more likely to have a lower level of well-being than people who score lower on prolonged grief.

Secondly, the path a model was statistically significant as well, $F(1,75) = 19.27$, $p < .001$, $R^2 = .21$. According to the model, prolonged grief predicts the mediator variable, insomnia (b=.16, t(75) = 3.50, p<.001). This indicates that people who have a high prolonged grief score, would have a higher insomnia level than people with lower prolonged grief scores.

Thirdly, the model with well-being as an outcome variable was also significant, $F(2,74) = 9.24$, $p < .001$, $R^2 = .20$. Regarding the prolonged grief variable it can be said that it does predict the outcome variable based on the model, b = -.31, t(74) = -3.03, p<.001. However, the direct effect of insomnia on well-being was not statistically significant, b = -.41, t(74) = -1.36, p = .179. This outcome depicts path b and shows that the mediator does not predict the outcome variable. Finally, the bootstrapping method also shows that the indirect effect is non-significant, which means that there is no support for a mediation in this model.

Table 3

Mediation Analysis for the Effect of Insomnia on the Relationship between Prolonged Grief and Well-Being

	B	SE	t	Sig.		CI
(Intercept)	73.24	7.35	9.97	.00	58.61	87.88
prolongedgrief	-0.37	0.10	-3.03	.00	-0.52	-0.11
insomnia	-0.41	0.30	-1.36	.18	-1.01	0.19
mediation	-0.06	0.05	-	-	-0.16	0.05

Further, three more mediation analyses were conducted for each subscale of well-being. Emotional well-being, psychological well-being, and social well-being were the outcome variables in each of the regressions. Similarly to the first analysis, prolonged grief was the predictor variable and insomnia the mediator variable. Moral injury was not included into the analyses since the variable did not show any significant correlations with either one of the subscales of well-being.

Path a showed that prolonged grief predicts the mediator variable, insomnia ($b=.16$, $t(75) = 3.50$, $p<.001$). This was identical for all three subscales. Path c showed significant negative effects for prolonged grief on emotional well-being ($b = -.10$, $t(74) = -4.09$, $p<.001$), social well-being ($b = -.10$, $t(74) = -2.11$, $p<.05$), and psychologic al well-being ($b = -.11$, $t(74) = -2.29$, $p<.05$). The negative effect of prolonged grief on emotional well-being was highly significant compared to the other two subscales. Path b did not show any significant effects for the direct effect of insomnia on emotional well-being ($b = -.02$, $t(74) = -0.32$, $p=.75$), social well-being ($b = -.16$, $t(74) = -1.17$, $p=.24$), and psychological well-being ($b = -.22$, $t(74) = -1.56$, $p=.12$). Finally, the bootstrapping method also showed no significant mediation effect for all three mediation analyses, as the intervals included zero.

Discussion

The purpose of this study was to investigate the relations between the variables well-being, prolonged grief, insomnia, and moral injury in a sample of Ukrainian refugees. Additionally, this research explored possible mediation effects of insomnia on the relationship between prolonged grief and overall well-being, as well as the three subscales emotional, social, and psychological well-being.

Relations of Prolonged Grief, Insomnia, and Moral Injury with Well-Being

Hypothesis one, which stated that there is a negative relationship between prolonged grief, moral injury, insomnia, **and** well-being, was partially accepted. The outcome indicated that there was no significant correlation between moral injury and well-being. However, it was found that the higher the scores on prolonged grief and insomnia, the lower is the level of well-being.

The significant, negative relation of prolonged grief with well-being in this sample of refugees is interesting, as the sample shows that on average 2.26 years have passed since the loss of the loved one (Table 1). Even though the majority of the participants lost a loved one more than a year ago, the sample still showed high levels of prolonged grief. This could mean that the relation of prolonged grief and well-being can last for an extended period of time, as the effect of the loss is still present. A longitudinal study might add valuable knowledge to this context as it would allow to measure the symptoms over an extended period of time and make inferences about cause and effect when it comes to the relation of prolonged grief and well-being. Another way to explain the findings might be the fact that the sample consisted of mainly female participants. Previous research indicates that gender might play a role in how the variables interact with each other. A study conducted by Lundorff et al. (2020) on prolonged grief found that there was a symptom-increase for women throughout the years, whereas the symptoms were higher for men in the beginning but decreased over time. This would suggest that women experience the impact of prolonged grief symptoms over a longer period of time, whereas men go through an immediate impact.

Future research should collect a larger sample with more diverse characteristics in order to measure gender differences to account for this lack of knowledge in the context of refugees as the current study mostly included female participants.

Another interesting observation is that the correlation between prolonged grief and emotional well-being was significant. This was also the case in the mediation analysis compared to the other two subscales. Future interventions could target emotional well-being in order to treat prolonged grief in refugees. Similarly, insomnia significantly correlated with psychological well-being which might be considered when developing new forms of treatment for refugees. This is also in line with previous research as sleep disturbances were found to cause a serious decline in psychological well-being (Lavie, et al., 2002).

Associations between Prolonged Grief and Insomnia

Hypothesis two, which stated that there is a positive relationship between prolonged grief and insomnia in refugees, was accepted. Thus, people who show high levels of prolonged grief show higher levels of insomnia. Besides the correlation analysis, the outcome of the mediation also supported that prolonged grief predicts insomnia. This suggests that refugees who show higher levels of prolonged grief are at a greater risk for sleep disturbances.

This finding is in line with existing literature such as a systematic review on sleep disturbances in bereavement. It was reported that bereaved people show an increase in sleep impairments (Lancel, et al., 2020). Another study focused on sleep disturbances in refugees who also suffer from post-traumatic stress disorder. The findings indicated that insomnia was indeed prevalent in refugees and that there is limited research on the treatment of the sleep disturbances (Sandahl, et al., 2017).

The current study was the first one to investigate insomnia and prolonged grief in refugees which stresses that post-traumatic stress is more researched than prolonged grief when it comes to refugees. Thus, the current findings add to the limited research by indicating that there is a correlation between insomnia and prolonged grief in refugees. However, according to a previous study, grief-focused treatments did not lower the level of insomnia in the target group (Germain, et al., 2006). It was suggested that additional sleep interventions would be effective to amplify the grief-related treatment outcomes (Germain, et al., 2006).

Consequently, a suggestion for future interventions aimed at treating prolonged grief symptoms would be to also target insomnia. However, insomnia did not directly predict well-being in the mediation model, which suggests that solely focusing on insomnia might not be more efficient than having interventions which also tackle prolonged grief in order to treat low levels of well-being. Therefore, combined interventions might work best to improve the level of well-being in refugees who suffer from prolonged grief and sleep disturbances.

Associations between Prolonged Grief and Well-Being Mediated by Insomnia

Hypothesis three, which stated that insomnia mediates the relationship between prolonged grief and well-being in refugees, was rejected since no mediation effect was found. This would suggest that the negative relationship between prolonged grief and well-being does not change within the frame of this research when the variable insomnia is added. Thus, individuals who lower their level of insomnia could still show high levels of prolonged grief which would impact their well-being negatively.

However, the findings related to hypothesis three do not stand in line with the conclusions made in previous research. It was found that insomnia mediated the effect of traumatic symptoms on mental health complaints which supports the role insomnia can play as a mediator when it comes to mental health issues such as prolonged grief (Secosan, et al., 2020). Furthermore, in a study conducted by de Lang et al. (2023), it was concluded that the symptoms of insomnia should be treated as well in order to target the prolonged grief symptoms in a more effective manner. One way to explain the effectiveness, is the fact that sleep is seen as a behaviour which can be modified compared to the other symptoms of prolonged grief disorder (Ellis, et al., 2021).

Additionally, the differing findings regarding hypothesis three need to be taken with caution due to the small sample size. According to previous research, a small sample size might lead to a lower statistical power for the detection of an effect. A growing body of evidence suggests that this is a reoccurring issue in psychological studies (Pan, et al., 2018).

All in all, previous research suggests that insomnia could be an important factor to consider when looking at the relationship between prolonged grief and well-being. However, there is a lack of studies which combined these three variables in the context of refugees. Thus, future research should include a larger sample size and measure the mediation effect of insomnia on the relationship between prolonged grief and well-being in order to provide more evidence for the effectiveness of treating both variables together in a group of refugees.

Exploration of Moral Injury

The relations of moral injury with the other variables were explored and no hypothesis was formulated as the nature and direction of these relations, and possible effects, are unclear.

First of all, there were no correlations between moral injury and the other three variables. This outcome is not in line with previous findings as they suggested that moral injury can have a negative effect on well-being and the onset of health complaints, such as insomnia (Hall, et al., 2022). Further studies suggest that moral injury can be seen as a contributor to the continuation of prolonged grief after the loss of a loved one (Hall, 2023).

One way to explain the lack of correlations could be that in the dataset the loss of loved ones was not always recent and very few cases lost their loved one due to the war. This might have been the reason why feelings of guilt or shame related to moral injury due to fleeing from the war and surviving were not present enough to show significant effects on their well-being, insomnia, or prolonged grief. This phenomenon is called survivor´s guilt and has been characterized as a moral emotion which is common in people who were exposed to trauma (Murray, et al., 2007). Previous research shows that survivor´s guilt can have an excruciating effect on the refugees´ well-being and sense of safety (Goveas & Coomarasamy, 2018).

An alternative way to explain the opposing outcome in this study could be that Ukrainian refugees experienced less stressors when moving from Ukraine to another country in Europe due to their cultural similarities. According to a recent review, moral injury might be higher or show different effects for refugees who have to flee to a country with different cultures, beliefs, and customs (Botelho, et al., 2022).

An interesting suggestion for future studies focusing on non-western refugees would therefore be to test if there are cultural differences when it comes to moral injury since this study only focused on Ukrainian refugees. This could lead to more insight into moral injury as it is a relatively recent concept.

Strengths

A strength which makes this research relevant is the fact that refugees who are currently experiencing the migration and integration in a new country were sampled. Furthermore, the Ukrainian refugee crisis has been and still is an ongoing concern all over Europe. Due to the urgency of the refugee crisis and the lack of research in this context, the variables which were investigated are highly relevant and show great potential regarding treatments for mental health issues in refugees.

Another strength which is important to note is the fact that all of the selected scales are highly researched, valid, and reliable scales, which include the Mental Health Continuum-Short Form (MHC-SF), the Traumatic Grief Inventory-Self Report (TGI-SR+) questionnaire, the Insomnia Severity Index (ISI), and the Moral Injury Appraisals questionnaire. Furthermore, all of the questionnaires were translated into Russian and Ukrainian in order to provide the participants with the opportunity to express their answers in their native language.

A final strength of the study is that it included anonymous self-report questionnaires which allowed the participants to feel more comfortable sharing personal information and answering truthfully. There is evidence that anonymous questionnaires led to higher measures of socially unacceptable or undesirable behaviour and thoughts compared to surveys which required the participants to identify themselves (Lelkes et al., 2012). Since there was no set date or time to take part in the survey, the participants also had the freedom to focus on the questions and answer them on their own pace without feeling any pressure.

Limitations

A limitation of the research was the small sample size, which consisted of 77 participants after excluding the cases according to the criteria. Since the research focused on refugees, it is recommended to include this as a criteria when collecting the data to avoid large differences in the sample. Another inclusion criteria to be considered for future research is to include participants who lost a loved one due to the war as this might lead to more interesting scores for moral injury and prolonged grief in the context of refugees.

Furthermore, the sample mostly included female participants. Thus, the results show less potential to be representative of the greater population. This would imply that more research needs to be conducted on the relations between well-being, prolonged grief, insomnia, and moral injury in refugees. By recruiting more participants and increasing the sample size, the mediation analyses might show significant mediation effects. This would allow for an insight into gender differences and how gender might influence the variables.

Another limitation is related to the study design of the research. Self-report momentary measures depend on the individual´s subjective perception and are not collected in a controlled environment (Möller et al., 2013). Therefore, participants might be more inclined to give answers according to the social-desirability bias which affects the level of validity of the data collected through survey research (Nederhof, 1985). This can lead to exaggerating positive qualities and under-reporting negative behaviours or feelings (Donaldson & Grant-Vallone, 2002). Furthermore, the cross-sectional study design does not allow for causal inference or the ability to investigate temporal relations. This can make it more difficult to interpret the identified associations between variables (Wang & Cheng, 2020).

Conclusion and Future Research

As the refugee crisis becomes an increasingly central topic in Europe, it is important to understand how the refugees' well-being is influenced by factors such as prolonged grief, insomnia, and moral injury as these are common symptoms that can arise due to losing a loved one and fleeing from war.

In sum, there is an overall need for more research in the context of refugees. One of the points to consider for future research is to focus on the sampling process in order to target a larger number of participants who can show high levels of prolonged grief, insomnia, and moral injury due to losing a loved one and fleeing from war. This could lead to more specific and significant results when it comes to their relations and effects on well-being, since all of the variables would strongly be present in the sample data. Another point, which is important to consider for future research, is to focus on gender and cultural differences in the context of refugees as these might shed more light on the relations between the variables.

The current research especially highlighted the relation between prolonged grief and insomnia. Future interventions could make use of the findings by treating insomnia alongside prolonged grief as grief-focused treatments might not be as effective on their own. Thus, the refugees´ sleep disturbances should be targeted as well, to achieve more effective results and improve their overall well-being. A final suggestion for future interventions would be to tailor the treatment based on the refugees´ home countries or gender, as non-western refugees might struggle more with moral injury and prolonged grief seems to increase for women over time.

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