#### **ORIGINAL ARTICLE**

# BEREAVEMENT AND COVID-19: PREVALENCE, COMORBIDITY, AND ASSOCIATED FEATURES AMONG UKRAINIAN SAMPLE

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Oleksandr S. Avramchuk<sup>1</sup>, Oksana Yu. Plevachuk<sup>2</sup>, Iryna A. Koval<sup>3</sup> <sup>1</sup>UKRAINIAN CATHOLIC UNIVERSITY, LVIV, UKRAINE <sup>2</sup>DANYLO HALYTSKY LVIV NATIONAL MEDICAL UNIVERSITY, LVIV, UKRAINE <sup>3</sup>BOGOMOLETS NATIONAL MEDICAL UNIVERSITY, KYIV, UKRAINE

#### ABSTRACT

The aim: To examine the features of experiences of bereavement reactions and the severity of comorbid mental health problems in persons who lost loved ones during the pandemic. **Materials and methods:** 191 volunteers aged 18-60 years participated in this study. All participants were tested during 2018-2020. To assess the mental health problems was used International Neuropsychiatric Interview (MINI) and a set of IAPT scales; to the psycho-emotional distress severity associated with loss of loved ones – Inventory of Complicated Grief, with verification of symptoms of complicated grief based on an independent assessment of two experts; and the quality of life satisfaction was assessed by the Quality of Life Enjoyment and Satisfaction Questionnaire, Short Form.

**Results:** The results show an association between the severity of symptoms of depression, general anxiety, social avoidance, and loss during the pandemic. The level of psychoemotional distress was associated with the experience of bereavement as a traumatic event for a group of participants who experienced loss during the pandemic and, at the same time, before the pandemic was associated with the severity of depression. Regardless of the time of loss, people who demonstrated signs of complicated grief have a more pronounced comorbid psychopathology, a higher level of psycho-emotional distress, and a lower level of satisfaction with life quality.

**Conclusions:** It has been established that a person's ability to experience loss as a traumatic experience and grieve during the pandemic is modified with the context of the life situation and reflects those challenges that impose quarantine restrictions

KEY WORDS: bereavement; complicated grief; COVID-19 pandemic; depression; anxiety disorders

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#### INTRODUCTION

The grieving process, despite specific patterns, can vary significantly from person to person with a diverse range of feelings that cannot be classified as "right" or "wrong," and often exacerbates feelings of emotional and social distress during the recovery period from a bereavement. Peculiarities of the relationship with the person lost, life-long coping strategies, and available support resources from the environment play an essential role in the grieving process [1-3]. At the same time, the circumstances in which the world has found itself since 2020 force us to reconsider aspects of grief and its comorbidities, taking into account the restrictions imposed by the COVID-19 pandemic.

Common psycho-emotional distresses associated with grief may include feelings of control loss, insecurity, excessive guilt, excessive anxiety and fear of death, or inability to "distance" oneself from thoughts of a loved one and causes of their death.

A systematic review by M. Stroebe and H. Schut [4] explains that forced socioeconomic changes and restrictions in response to the prevalence and mortality of the pandemic are themselves modifiers that increase people's vulnerability to distress and propensity to social isolation, that inhibits mourning by the traditional way.

In the same way, limits of communication and opportunity to care at a distance, including by staying loved ones in inpatient units and restricting to funeral services in fatal cases, can increase social discontent, anger or exacerbate social injustice [2; 4-6]. Considering the analysis of the concepts of grief in the psychological theories can be pointed out that the grieving process will reflect the context of social and cultural aspects of the individual's environment at the time of bereavement; the time elapsed since the bereavement and duration of pathopsychological symptoms accompanying this journey [7-10]. Among the risk factors of complicated grief in the context of the COVID-19 pandemic should be noted a medical history of mental disorders (including drug or alcohol use), socioeconomic factors (social isolation by pandemic restriction, living alone, loss of a guardian, or financial security), features of available support from relatives (including the participation of relatives in decision-making on treatment) and a specific family tradition of perception of the death [6: 11-14].

Studies of factors associated with an increased risk of complicated grief published before the pandemic have shown an association with anxiety disorders, including PTSD, panic disorder, and generalized anxiety disorder, and a lower quality of life compared to people without anxiety disorders in their medical history [15-18]. At the same time, one of the vulnerabilities, in our opinion, may be a tendency to high levels of social anxiety and the presence of social anxiety disorder in particular. Thus, social isolation, restrictions on direct support from the closest environment, and access to spiritual, medical, or psychological professional help are expected to increase the risk of complicated grief as a way of processing traumatic experiences.

The current study will provide an initial assessment of the prevalence and severity of grief-related mental health disorders among people who have suffered during the pandemic. We expect that will increase knowledge about the need for psychological support and treatment and may form the basis for developing preventive measures appropriate to the current situation.

# THE AIM

The study aims to analyze comorbid pathopsychological changes in persons who lost loved ones during the COVID pandemic.

# MATERIALS AND METHODS

The sample included people who sought psychotherapeutic help by psycho-emotional discomfort of bereavement from 2018 to 2020. Data obtained during diagnostic interviews (with the informed consent of the participants) were used for this study. Diagnostic interviews in the period between May and December 2020 were conducted online.

The criteria for inclusion: men and women aged 18 to 60 years who had experienced a bereavement and didn't receive medical treatment at the time of consulting. Exclusion criteria included a medical history of disorders such as schizophrenia, bipolar disorder, psycho-organic disorders, and intellectual disabilities, as well as the presence of persistent mental illness associated with substance use in the previous 12 months. All participants confirmed the absence of active COVID disease symptoms.

The interviews collected socio-demographic data, information on the history of previous losses and grief, and actual bereavement experience. A diagnostic interview, The MINI: International Neuropsychiatric Interview by Sheehan D.V. and Lecrubier Y. (adapted by I.Ushtan, 2011), was used to screen for mental status, and questions from Inventory of Complicated Grief: measures maladaptive responses to loss (1995) were used to assess the severity of psycho-emotional distress associated with loss as screening of complicated grief. This questionnaire has not been adapted and validated in Ukraine, imposing certain restrictions on the evaluation criteria. The questionnaire was tested in the English sample ( $\alpha = 0.94$ ; test-retest reliability = 0.80) and demonstrated high reliability and validity in diagnosing signs of complicated grief [19; 20]. We translated the English version of the questionnaire and had done a reverse translation to verify the adequacy of the

content of the proposed statements. After that, we used the diagnostic criteria proposed in DSM-5 and ICD-11 based on an independent diagnostic assessment by two experts to verify the signs of complicated grief.

Assessment of the manifestations and severity of comorbid conditions was performed following the NICE recommendations based on a set of IAPT scales [21]. Q-LES-Q-SF: Quality of Life Enjoyment and Satisfaction Questionnaire, Short Form [22] were used to assess life satisfaction.

Differences between groups on continuous variables used two-way t-tests for categorical variables - Chisquare ( $\chi$ 2) test. The mean values of scales cores were compared between groups using ANOVA with post hoc tests (Tukey'smethod). Multiple linear regression analyses were conducted for the level of psycho-emotional distress, quality of life enjoyment and satisfaction, and the severity of social phobia symptoms. Statistical analyses were conducted using SPSS Version 23.0 (SPSS Inc., 2019).

# RESULTS

The study sample was 191 people, 152 (79,84%) of middle-aged women 31,2 years. 92 participants (48,16%) experienced bereavement during the COVID-19 pandemic; among them, 53 (30,18%) reported a loss of loved ones due to complications of COVID-19. The period from the moment of loss averaged eight months. Given that at least six months after the bereavement, signs of grief were the leading cause of psycho-emotional discomfort, 57 people (29,84%) showed symptoms that met the criteria of complicated grief. At the time of the interviewing, 60 people (31,41%) lived alone, including mourners who found themselves in the quarantine zone imposed in 2020 and could not live with relatives. At the same time, a comparative analysis of socio-demographic indicators of age, gender, education, availability of social support (as living nearby), and duration after bereavement did not reveal significant differences (p<0,05) between the group of people who loss of loved ones before pandemics and those who lost during this period.

Table I presents the prevalence of mood and anxiety disorders, current symptom severity, and social impairment in subjects who lost loved ones before and during the pandemic.

The results did not demonstrate a significant difference in the prevalence of signs of complicated grief by groups. The results showed that the prevalence of mental health problems in the last five years also had no statically significant distribution.

The comparative analysis revealed statistically higher levels of severity depressive and anxiety symptoms (p<0,01), a stronger tendency to avoid social interaction (p<0,05), and a lower level of life satisfaction (p<0,05) in the group of the bereaved during the pandemic.

In addition, analysis of the linear regression results revealed the impact of the grieving level as a traumatic event on the higher level of psycho-emotional distress for the

	3						
	Lost during pandemic (n=92)	ıring Lost before : (n=92) pandemic (n=99)			Analyses (*p<0,05)		
Mental health disorder (with in the past five years), % (n)							
MDD	68,5 (63)	60,6 (60)	χ2 = 1,14	1	0,285		
Generalized anxiety disorder	18,5 (17)	11,1 (11)	χ2 = 1,46	1	0,227		
Social anxiety disorder	40,2 (37)	46,4 (46)	χ2 = 1,54	1	0,283		
Panic disorder	13, 04 (12)	7,07 (7)	χ2 = 2,33	1	0,127		
Specific phobia	7,61 (7)	-	-	-	-		
Posttraumatic stress disorder	22,8 (21)	20,2 (20)	χ2 = 0,005	1	0,946		
Alcohol abuse	2,17 (2)	6,06 (6)	χ2 = 0,143	1	0,706		
Alcohol dependence	-	-	-	-	-		
Current comorbid complicated grief							
CG	33,69 (31)	26,26 (26)	χ2=0,368	1	0,544		
Current symptom severity and social impairment, mean (SD)							
PHQ-9	16,32 (3,04)	15,16 (2,38)	t = 2,931	172,24	0,004*		
GAD-7	11,22 (2,88)	9,92 (3,49)	t = 2,814 186,53		0,005*		
SPIN	26,65 (10,05)	23,26 (12,01)	t = 2,120 187,02		0,035*		
IES-R	24,58 (3,28)	24,36(3,61)	1) t = 0,147 188,93		0,649		
W&SAS	34,29 (3,16)	33,85 (4,09)	t = 0,825 182,83		0,411		
Q-LES-Q-SF	28,56 (4,56)	28,56 (4,56) 30,13 (5,77) t = -2.087		184,28	0,038*		

<b>Table 1.</b> Compared characteristics of the bereaved during and before the pande
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Table II. Compared characteristics of the bereaved participants due to COVID-19 and other reasons during the pandemic

	Bereaved -COVID (n=39)	Bereaved +COVID (n=53)		df	Analyses (*p<0,05)	
Current comorbid complicated grief						
CG	38,46 (15)	30,18 (16)	χ2 = 0,574	1	0,718	
Current symptom severity and social impairment, mean (SD)						
PHQ-9	16,89 (2,87)	15,09 (3,12)	t = 1,58	85,53	0,118	
GAD-7	11,10 (3,16)	11,32 (2,69)	t = -0,35	73,90	0,729	
SPIN	27,76 (10,52)	25,83 (9,72)	t = 0,90	78,15	0,369	
IES-R	24,77 (3,29)	24,45 (3,41)	t = 0,90	85,61	0,646	
W&SAS	34,49 (3,16)	34,15 (3,07)	t = 0,49	78,58	0,620	
Q-LES-Q-SF	28,33 (5,48)	28,73 (3,79)	t = -0,39	63,64	0,695	

-COVID – bereaved participants who lost loved ones for other reasons during the pandemic; +COVID – bereaved participants who lost loved ones due to COVID-19 during the pandemic

group of participants who suffered a bereavement during the pandemic (B = 0,595, t = 3,261, p<0,01). In contrast, this indicator in the group who experienced bereavement before the pandemic was associated with the severity of depressive symptoms (B = 0,524, t = 1,754, p<0,05).

The lower level of satisfaction with the quality of life in the group of people who suffered losses during the pandemic showed an association with the severity of generalized anxiety disorder symptoms (B = -0,191, t = -2,475, p<0,05) and the level of traumatic events impact (B = -0,502, t = -3,283, p<0,01). In the group that had suffered a loss before the pandemic, there was an association with the levels of depressive

symptoms (B = -0,134, t = -2,284, p<0,01) and the level of grief as a traumatic event (B = -0,213, t = -2,026, p<0,05).

In both groups, the level of social avoidance and distress in social communications was associated with the severity of the generalized anxiety disorder symptoms (during - B = 1,875, t = 7,401, p<0,001; before - B = 1,963, t = 8,031, p<0,001), depressive symptoms (during - B = 1,314, t = 5,644, p <0,001; before - B = 0,954, t = 2,307, p<0,05), and the level of traumatic events impact (during - B = 0,467, t = 2,229, p<0,05; before - B = 0,474, t = 2,023, p<0,05).

Another factor we considered in the study was the death of a loved one from the coronavirus infection. When

	During p	pandemic	Before pa	andemic				
	CG n=31	NoCG n=61	CG n=26	NoCG n=73	ANOVA F value	р	Tukey's post-hoc tests*	
	1	2	3	4				
						,000	1 vs 2, 4: p<0,001	
	19,72	14,76	17 38 (2 80)	14,36	39,18	,003	1 vs 3: p<0,01	
FTIQ-9	(2,07)	(1,89)	17,50 (2,00)	(1,60)		,002	2 vs 4: p<0,01	
						,000	3 vs 4: p<0,001	
	13,96	0.07 (0.00)	14.27 (2.17)	0.20 (1.00)	40.00	,000	1 vs 2, 4: p<0,001	
GAD-7	(2,56)	9,97 (2,08)	14,27 (3,17)	8,38 (1,96)	40,98	,000	3 vs 2, 4: p<0,001	
CDIN	37,38	21,71	39,81	19,97	52.02	,000	1 vs 2,4: p<0,001	
SPIN	(9,32)	(5,75)	(10,74)	(4,78)	52,83	,000	3 vs 2,4: p<0,001	
	25,38	24,71	26 72 (2 26)	23,73	5.00	0.001	2 2 4 0 001	
IES-K	(3,08)	(3,24)	26,73 (3,26)	(3,20)	5,98	0,001	3 vs 2, 4: p<0,001	
14/0 C A C	34,93	34,00	27.00 (2.15)	32,73	6.01	,002	3 vs 2: p<0,01	
VV&SAS	(3,52)	(2,96)	37,00 (2,15)	(4,05)	6,81	,000	3 vs 4: p<0,001	
						,004	1 vs 4: p<0,01	
Q-LES-Q-SF	27,18 (4,07)	28,46 (5,69)	24,88 (4,10)	32,00 (5,11)	10,27	,016	2 vs 4: p<0,05	
						,003	3 vs 2: p<0,01	
						,000	3 vs 4: p<0,001	

Table III. Clinical correlates current symptom severity and social impairment of the bereaved with complicated grief and without.

CG – with complicated grief; NoCG – without complicated grief

\* - only post-hoc pairs who showed significant difference included

comparing casualties during the pandemic, found no statistically significant differences in the prevalence of current comorbid disorders and concomitant psycho-emotional distress due to a bereavement caused by complications of COVID-19 (Table II).

Further analysis of the severity of current comorbid disorders and concomitant psycho-emotional distress was focused on subgroups of participants with distribution according to signs that meet the criteria of complicated grief (Table III).

The results of post-hoc tests indicate that people who show signs of complicated grief, regardless of the period when they lost loved ones, have a more pronounced comorbid pathology, higher levels of psycho-emotional distress, and lower levels of satisfaction with the quality of their lives.

# DISCUSSION

Although grief following the death of a significant person is a normal human response, it should be considered by the numerous psychological, social, economic, and medical impacts of the COVID-19 pandemic. The studies of the prevalence of this phenomenon indicate from 10% among adults after non-traumatic loss to 49% after traumatic loss [23]. According to the theoretical model of the study, the presence of signs and symptoms that indicate prolonged grief reactions were considered in the context of the pathogenesis of complicated grief. We expected that the prevalence of complicated grief signs in the pandemic would be statistically higher but didn't confirm our hypothesis within the study groups. We assume that one of the possible reasons for absent of the statically significant difference is diagnostic errors at previous visits to various specialists for clinically significant signs of major depressive disorder, PTSD, and other anxiety reactions to bereavement, manifested during the last six months. Another possible reason is to diagnose the major depressive disorder and/or PTSD, which could justify hospitalization when seeking medical care from public mental health services.

Statistically higher levels of severity of comorbid symptoms in the group who experienced bereavement during the pandemic may be due to the peculiarities of quarantine restrictions. The challenges posed by the COVID context (limited psychological and social resources, family problems, relationship and communication issues, physical and mental health problems, etc.) reduce a person's resilience and exacerbate depressive and anxiety states [3]. At the same time, loss as a trigger increases vulnerability to the manifestation of these disorders. Perhaps thus, there was no demonstrated significant difference in subjective feelings of distress by bereavement despite the history of loss.

Considering that we didn't find statistically significant differences in the clinical state of grieving for the person who died by complications of COVID-19, we thought that the availability and prevalence of coronavirus mortality information didn't add additional traumatic context. It is possible that in the context of the global crisis during the active period of spread and mortality, the fact of death due to complications of COVID-19 in most cases was perceived as an expected result. We recognize that people who have lost their loved ones due to complications of COVID-19 or other illnesses during this period may feel more vulnerable and helpless in the context of anti-epidemic measures. At the same time, other factors, such as restrictions on access to traditional (religious) gatherings, social precautions against examples of irresponsibility in compliance with quarantine restrictions, and economic uncertainty, could significantly impact the process of prolonged grieving [6, 11, 13, 14].

Our results indicate that regardless of the period when lost loved ones, people who show signs of complicated grief have a more pronounced comorbid pathology, higher levels of psycho-emotional distress, and lower levels of satisfaction with the quality of their lives. At the same time, we noticed higher depressive symptoms among bereaved people during the pandemic.

The lack of statistically significant differences between other subgroups may indicate a general aspect of perceptions of distress and life challenges during a pandemic (Table III). We assume that quarantine measures themselves influenced the formation of distress and disrupted psycho-emotional aspects of adaptation to new living conditions. Still, they smoothed out the traumatic experience of bereavement as a sudden, unexpected crisis. In our study, results show significantly higher levels of psycho-emotional distress and the impact of traumatic experiences among people with signs of complicated grief who had suffered a bereavement before the pandemic than people without symptoms of complicated grief.

Also, the combination of the above factors may explain why people who do not show signs of complicated grief during the pandemic have more severe manifestations of depression and statistically significantly lower quality of life satisfaction than people who had suffered a bereavement before the anti-epidemic period.

As there was no statistically significant difference between the diagnosed disorders in the anamnesis, we cannot conclude whether the experience of widespread anxiety and affective disorders are independent vulnerabilities in the context of a pandemic situation. At the same time, the presence of anxiety and affective disorders in the anamnesis suggests that mastering strategies, typical beliefs, and behavioral strategies that are characteristic of these disorders may be modifying factors in the severity of comorbid pathology or influence the formation of complicated grief.

In summary, the analysis suggests that avoiding the social experience of post-loss interaction in the context of the pandemic can be seen as complementary to avoiding the traumatic experience of bereavement, limiting social contact through quarantine measures, and premorbid levels of social anxiety before assessment and the opinion of others about them or their status.

Despite the results, our study has several limitations. First of all, there are no valid diagnostic tools that meet the DSM-5 and ICD-11 criteria to diagnose signs of complicated grief. The ICG questionnaire is not validated in the languages spoken fluently in Ukraine. Therefore, the results of our study cannot be directly generalized as a diagnosis of complicated grief as an independent disorder, as they may be erroneous considering the cultural, religious, and ethnic aspects of the sample. The analysis was conducted on a Ukrainian-language sample without considering gender, ethnicity, or cultural (religious) traditions, which based on the analysis of vulnerabilities in a pandemic may affect the possibility of generalization. Second, although two experts verified the mental health assessment, we cannot say that the symptoms of other diseases not reported by the participants were mistakenly identified as signs of complicated grief. Also, expanding the sample and further analyzing and monitoring more than eight months after the bereavement could enrich our data and opportunities for interpretation.

#### CONCLUSIONS

The onset of the COVID-19 pandemic and the introduction of quarantine restrictions are essential factors affecting today's population's mental health and psychological well-being. At the same time, several social, economic, and cultural factors increase vulnerability to existing problems and increase general distress, thereby impairing our ability to adapt to new conditions. Even though a bereavement at any time is a significant shock, it becomes particularly relevant in the period of quarantine restrictions.

A person's ability to experience loss as a traumatic experience and grieve during the pandemic is modified with the context of the life situation and reflects those challenges that impose quarantine restrictions. In such circumstances, the psycho-emotional resource and the possibilities of resilience may be impaired. Automatic depressive beliefs about oneself, irrational anxious expectations and social avoidance, maladaptive behavioral strategies during the period of adaption to pandemic restrictions increase the prolongation of reactions to bereavement, the severity of comorbid pathology, and the risk of complicated grief.

Further research will expand and supplement the understanding of the mechanisms of the pandemic impact on the grieving process, which will help modify the recommendations and strategies of psychological care and support.

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# ORCID and contributionship:

Oleksandr S. Avramchuk: 0000-0001-8512-7817 <sup>A-D,F</sup> Oksana Yu. Plevachuk: 0000-0003-0164-8549<sup>A,B,D,E</sup> Iryna A. Koval: 0000-0001-8154-4154<sup>A,B,E</sup>

# Conflict of interest:

The Authors declare no conflict of interest.

# **CORRESPONDING AUTHOR**

#### Oleksandr S. Avramchuk

Ukrainian Catholic University 17 Ilariona Sventsitskogo st., 79000 Lviv, Ukraine e-mail: avramchuk.md@ucu.edu.ua

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