

Introduction

The most recent Russian-Ukrainian War has been linked to adverse mental health in the Ukrainian population (Ben-Ezra et al., 2023; Lushchak et al., 2024; Osokina et al., 2023; Pavlova et al., 2022). However, less attention has been given to the mental health of mental health workers (MHWs) who are providing services during the ongoing conflict. Given that MHWs are at risk for increased mental health problems amid crises due to their professional responsibilities in addition to conflict-related distress (Al Hariri et al., 2022; Awan et al., 2021; Rosales Vaca et al., 2022), identifying factors linked to well-being in Ukrainian MHWs is crucial to identifying intervention targets and resources to preserve and improve functioning in this population.

To date, only two known studies have examined mental health of Ukrainian MHWs since the 2022 Russian invasion. One study assessed the perceived mental health during the war using a single-item question (Kang et al., 2023). The other focused on negative mental health outcomes such as depression, anxiety, and burnout (Pinchuk et al., 2022). While these studies contribute to understanding the prevalence and burden of adverse mental health outcomes in Ukrainian MHWs, further research is needed to identify levels and correlates of well-being and inform domains of well-being that may benefit from targeted interventions and resource allocation.

Purpose

Toward this end, we aimed to (1) examine levels of domain-specific well-being in Ukrainian MHWs; (2) identify and quantify the relative importance of factors associated with well-being; and (3) examine interactions of risk and protective factors in relation to each well-being domain.

Methodology

Participants

In July and August 2023, a convenience sample of 178 Ukrainian MHWs were invited to complete a survey by a nongovernmental organization in Ukraine, *International Platform on Mental Health*, in collaboration with a local university. Participants provided informed consent before starting the survey. A sample size was not predetermined given the uncertain conditions in Ukraine; thus, the final sample size includes MHWs who completed the survey over the two-month period of data collection.

Assessments

Well-being was assessed using a modified version of the Secure Flourishing Index

(VanderWeele, 2017). Participants rated ten items on a scale of 0-10, and scores were computed into six domains: happiness and life satisfaction (2-item; Cronbach's $\alpha=0.89$), physical health (single-item), meaning and purpose (2-item; Cronbach's $\alpha=0.83$), character and virtue (2-item; Cronbach's $\alpha=0.73$), close social relationships (2-item; Cronbach's $\alpha=0.90$), and financial stability (single-item); see Table 1 for detailed description of well-being assessments.

Furthermore, as summarized in detail in Table 1, a broad range of sociodemographic, war-related, mental health, and psychosocial variables was assessed. Sociodemographic variables included age, sex, length of work experience, and occupation. War-related variables included distress from displacement, witnessing destruction of Ukraine, witnessing death, and uncertainty. Mental health variables included anxiety, depressive, and posttraumatic stress disorder (PTSD) symptoms, as well as burnout and current suicidal ideation. Psychosocial variables included optimism, gratitude, and presence of and search for meaning in life.

Statistical Analysis

Data were analyzed in five steps. First, descriptive statistics were computed to summarize levels of well-being in each domain. Second, bivariate correlations were conducted between six domains of well-being, and a broad range of sociodemographic, war-related, mental health, and psychosocial variables. Third, a series of multivariable linear regressions were conducted to identify independent correlates of well-being domains; only significant variables in bivariate correlations ($p<0.05$) were included in these models. Fourth, interaction terms of significant correlates were then incorporated into these models to explore interactions of risk and protective factors in relation to each well-being domain. Fifth, relative importance analyses were conducted to quantify the relative variance in scores on each well-being domain explained by each statistically significant correlate, accounting for intercorrelations between independent variables (Tonidandel & LeBreton, 2011).

Ethical considerations

This study was based on a de-identified, secondary data. No approval from an ethics committee was required. Informed consent was obtained during the data collection

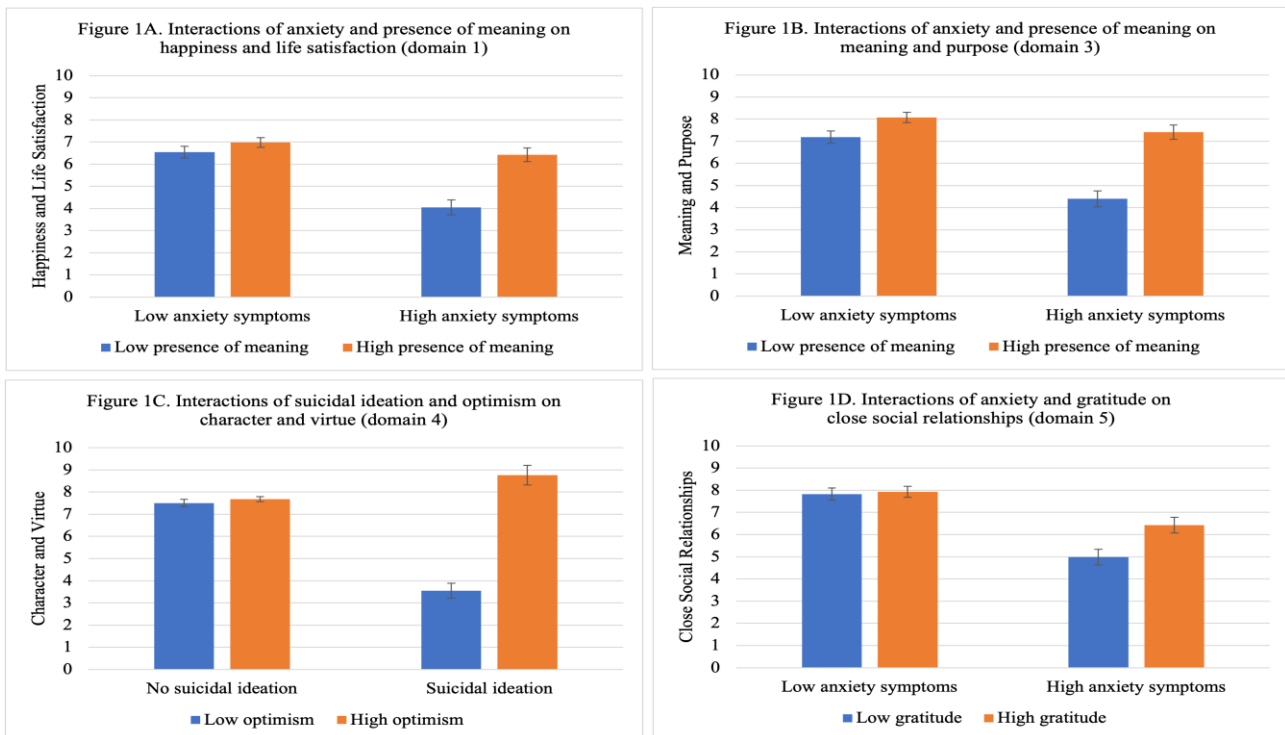
Results

Table 2 summarizes sample characteristics and results of multivariable regressions. Lower anxiety symptoms ($\beta=-0.44$, $p<0.01$), absence of suicidal ideation ($\beta=-0.18$, $p<0.01$), and higher

presence of meaning scores ($\beta=0.28, p<0.01$) were independently associated with greater happiness and life satisfaction scores. Lower anxiety ($\beta=-0.29, p<0.01$) and PTSD symptoms ($\beta=-0.25, p<0.05$) were independently associated with greater physical health scores. Lower anxiety symptoms ($\beta=-0.36, p<0.01$) and higher presence of meaning scores ($\beta=0.41, p<0.01$) were independently associated with greater meaning and purpose scores. Absence of suicidal ideation ($\beta=-0.26, p<0.01$) and higher optimism scores

($\beta=0.35, p<0.01$) were independently associated with greater character and virtue scores. Lower anxiety symptoms ($\beta=-0.41, p<0.01$) and higher gratitude scores ($\beta=0.19, p<0.01$) were independently associated with greater close social relationships scores. Higher gratitude ($\beta=0.29, p<0.01$) and search for meaning scores ($\beta=0.24, p<0.01$) were independently associated with greater financial security scores.

Figure 1. Interactions of risk and protective factors in relation to well-being domains



Note. We used median split to operationalize low and high levels of anxiety symptoms, presence of meaning, optimism, and gratitude. Error bars indicate 95% confidence intervals.

Relative importance analyses revealed that lower anxiety symptoms (43.7% relative variance explained), higher presence of meaning scores (35.0%), and absence of suicidal ideation (21.3%) explained the variance in happiness and life satisfaction scores; lower PTSD (50.4%) and anxiety symptoms (49.6%) explained the variance in physical health scores; higher presence of meaning scores (57.7%) and lower anxiety symptoms (42.3%) explained the variance in meaning and purpose scores; higher optimism scores (59.2%) and absence of suicidal ideation (40.8%) explained the variance in character and virtue scores; lower anxiety symptoms (83.8%) and higher gratitude scores (16.2%) explained the variance in close social relationships scores; and higher gratitude (59.5%) and search for meaning (40.5%) scores explained the variance in financial stability scores.

Furthermore, results of interaction analyses revealed significant interactions between anxiety symptoms and presence of meaning scores in predicting happiness and life satisfaction ($\Delta R^2=0.073, \Delta F(1,174)=26.27, \beta=0.32, p<0.001$; Figure 1A) and meaning and purpose ($\Delta R^2=0.057, \Delta F(1,174)=23.24, \beta=0.28, p<0.001$; Figure 1B) scores; suicidal ideation and optimism scores in predicting character and virtue scores ($\Delta R^2=0.18, \Delta F(1,174)=54.19, \beta=0.55, p<0.001$; Figure 1C); and anxiety symptoms and gratitude scores in predicting close social relationships scores ($\Delta R^2=0.065, \Delta F(1,174)=20.42, \beta=0.27, p<0.001$; Figure 1D).

Discussion

To our knowledge, this study is the first to examine levels and key correlates of domain-

specific well-being among Ukrainian MHWs amid the ongoing war. Results of this study revealed that Ukrainian MHWs reported moderate levels (average 6.0 to 7.4/10) of well-being during the ongoing conflict. Lower levels of mental health symptoms (i.e., anxiety and PTSD symptoms, current suicidal ideation) and higher levels of protective psychosocial factors (i.e., dispositional optimism, meaning in life, gratitude) were associated with higher well-being. Interestingly, none of the war-related stressors were associated with well-being. This may in part reflect functional resilience, with MHWs able to function relatively normally even when experiencing distress (Litz, 2014). Indeed, bivariate correlations showed that while war-related stressors were associated with adverse mental health outcomes (burnout, anxiety and PTSD symptoms), they were largely unrelated to well-being scores.

MHWs with high levels of protective psychosocial factors such as meaning in life were more likely to report better well-being even in the presence of mental health difficulties. Higher levels of meaning in life may help individuals to disengage from ruminative and anxiety-provoking thoughts (Ostafin & Proulx, 2020), which could in turn help to maintain well-being in the presence of distress. Thus, interventions to help promote such protective psychosocial factors (Czyzowska & Gurba, 2021; van Agteren et al., 2021) may help enhance the well-being of MHWs. Further research is warranted to develop and evaluate such interventions in this population.

This study has three notable limitations. First, the data are from a convenience sample of Ukrainian MHWs, which may limit generalizability to other MHWs or trauma-exposed populations. Second, use of self-report measures might have been susceptible to social desirability bias. Third, use of cross-sectional data limits causal interpretation between well-being and its correlates.

Conclusions

Notwithstanding these limitations, results of this study provide insight into the levels and key correlates of multiple well-being domains among Ukrainian MHWs amid the ongoing war. They further suggest that interventions to mitigate mental health difficulties and bolster protective psychosocial factors may help promote well-being in this population.

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Conflict of interest

The authors declare that they have not conflicts of interest.

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Table 1. Assessments of well-being and sociodemographic, war-related, mental health, and psychosocial variables

Measure	Assessment
Well-being	
Happiness and life satisfaction	Mean score on the two-item (domain 1) from the Secure Flourishing Index (VanderWeele, 2017): “Overall, how satisfied are you with life as a whole these days?” (0=Not satisfied at all to 10=Completely satisfied) and “In general, how happy or unhappy do you usually feel?” (0=Extremely unhappy to 10=Extremely happy). Cronbach’s $\alpha=0.89$.
Physical health	Score on the single-item (domain 2) from the Secure Flourishing Index (VanderWeele, 2017): “In general, how would you rate your physical health?” (0=Poor to 10=Excellent).
Meaning and purpose	Mean score on the two-item (domain 3) from the Secure Flourishing Index (VanderWeele, 2017): “Overall, to what extent do you feel the things you do in your life are worthwhile?” (0=Not at all worthwhile to 10=Completely worthwhile) and “I understand my purpose in life” (0=Strongly disagree to 10=Strongly agree). Cronbach’s $\alpha=0.83$.
Character and virtue	Mean score on the two-item (domain 4) from the Secure Flourishing Index (VanderWeele, 2017): “I always act to promote good in all circumstances, even in difficult and challenging situations.” (0=Not true of me to 10=Completely true of me) and “I am always able to give up some happiness now for greater happiness later.” (0=Not true of me to 10=Completely true of me). Cronbach’s $\alpha=0.73$.
Close social relationships	Mean score on the two-item (domain 5) from the Secure Flourishing Index (VanderWeele, 2017): “I am content with my friendships and relationships.” (0=Strongly disagree to 10=Strongly agree) and “My relationships are as satisfying as I would want them to be.” (0=Strongly disagree to 10=Strongly agree). Cronbach’s $\alpha=0.90$.
Financial security	Score on the single-item (domain 6) from the Secure Flourishing Index (VanderWeele, 2017): “How often do you worry about being able to meet normal monthly expenses?” (0=Worry all the time to 10=Do not every worry).
Sociodemographic variables	
Age	Reported in years.
Sex	Male; Female; Other.
Work experience	Reported in months. Recoded into quartiles.
Occupation	Psychologist (25.3%); Psychiatrist (5.6%); Medical doctor (9.0%); Nurse (3.4%); Social worker (17.4%); Volunteer worker (39.3%). Based on the Inter-Agency Standing Committee (IASC) guidelines on mental health and psychosocial support in emergency settings (Inter-Agency Standing Committee, 2007), volunteer workers are those who address “basic services and security,” “community and family support,” and “focused, non-specialized supports,” while other health professionals are those in charge of “specialized services.” Thus, occupation was recoded into health professionals (psychologist, psychiatrist, medical doctor, nurse, social worker) versus volunteer worker.
War-related variables	
Distress from displacement	“The evacuation of relatives/friends/colleagues to other regions of Ukraine or other countries due to the Russian invasion affects my mental health.” Ratings ranged from 0=no impact to 10=a significant impact.
Distress from witnessing destruction	“The destruction of Ukraine due to the Russian invasion, witnessed by my own experience and through media sources, affects my mental health.” Ratings ranged from 0=no impact to 10=a significant impact.
Distress from witnessing death	“The information—from social networks and mass media—about the death of Ukrainian civilians and military personnel due to the Russian invasion affects my mental health.” Ratings ranged from 0=no impact to 10=a significant

	impact.
Distress from uncertainty	“The uncertain conditions due to the Russian invasion affect my mental health. (For example: what will happen next? When will the war end? Can new territories be occupied? Will a man-made disaster repeat itself?)” Ratings ranged from 0=no impact to 10=a significant impact.
Mental health variables	
Anxiety symptoms	Score on the 2-item measure of anxiety disorders from the Generalized Anxiety Disorder-2 (Sapra et al., 2020): Since the most recent Russian invasion, how often have you been bothered by the following problems in the past two weeks? “Feeling nervous, anxious, or on edge,” and “Not being able to stop or control worrying.”; Ratings ranged from 1=Not at all to 4=Nearly every day. Cronbach’s $\alpha=0.70$.
Depressive symptoms	Score on the 2-item measure of depression from the Patient Health Questionnaire-2 (Kroenke et al., 2003): Since the most recent Russian invasion, how often have you been bothered by the following problems in the past two weeks? “Feeling down, depressed, or hopeless,” and “Little interest or pleasure in doing things.”; Ratings ranged from 1=Not at all to 4=Nearly every day. Cronbach’s $\alpha=0.51$.
PTSD symptoms	Score on the abbreviated four-item version of the PTSD Checklist for DSM-5 (Geier et al., 2020): Since the most recent Russian invasion, how often have you been bothered by the following symptoms in the past month? “Repeated, disturbing, and unwanted memories of the invasion/war,” “Avoiding external reminders of the invasion/war,” “Having strong negative beliefs about yourself, other people, or the world,” and “Feeling jumpy or easily startled”; Ratings ranged from 1=Not at all to 5=Extremely. Cronbach’s $\alpha=0.79$.
Burnout	Score on the single-item measure of burnout from the Maslach Burnout Inventory (West et al., 2012): “Since the most recent Russian invasion, I have felt burnt out (e.g., emotionally exhausted) from my work.”; Ratings ranged from 0=Never to 5=Every day.
Current suicidal ideation	Score of 1 or higher on the single-item measure of suicidal ideation (item 9) from the Patient Health Questionnaire-9 (Altura et al., 2016): “Over the last 2 weeks, how often have you been bothered by: Thoughts that you would be better off dead or of hurting yourself in some way.”; Ratings ranged from 0=Not at all to 3=Nearly every day.
Psychosocial variables	
Optimism	Score on the single-item measure of optimism from the Life Orientation Test-Revised (Scheier et al., 1994): “In uncertain times, I usually expect the best”; Ratings ranged from 1=strongly disagree to 6=strongly agree.
Gratitude	Score on the single-item measure of gratitude from the the Gratitude Questionnaire (McCullough et al., 2002): “I have so much in life to be thankful for”; Ratings ranged from 1=strongly disagree to 6=strongly agree.
Presence of meaning in life	Score on the single-item measure of presence of meaning in life from the Meaning in Life Questionnaire (Steger et al., 2006): “I understand my life’s meaning”; Ratings ranged from 1=absolutely untrue to 6=absolutely true.
Search for meaning in life	Score on the single-item measure of search for meaning in life from the Meaning in Life Questionnaire (Steger et al., 2006): “I am searching for meaning in life”; Ratings ranged from 1=absolutely untrue to 6=absolutely true.

Table 2. Sample characteristics and results from bivariate analyses and multivariable linear regression analyses.

	Sample characteristics Mean (SD) or n (%)	Domain 1: Happiness and life satisfaction		Domain 2: Physical health		Domain 3: Meaning and purpose		Domain 4: Character and virtue		Domain 5: Close social relationships		Domain 6: Financial stability	
		r	β	r	β	r	β	r	β	r	β	r	β
Sociodemographic variables													
Age	34.8 (9.9)	0.07	-	-0.09	-	0.10	-	0.11	-	0.03	-	0.04	-
Female sex ¹	155 (87.1%)	-	-	-0.09	-	0.12	-	0.10	-	0.07	-	0.07	-
Work experience (in months) ²	94.9 (88.0)	0.00	-	-0.08	-	0.00	-	0.09	-	-	-	0.01	-
Volunteer status ³	70 (39.3%)	0.03	-	-0.07	-	0.06	-	-	-	-	-	-0.15*	-0.08
War-related variables													
Distress from displacement	5.1 (2.8)	-	-	0.06	-	-0.10	-	0.04	-	-	-	0.02	-
Distress from witnessing destruction	7.7 (2.1)	-	-	-0.03	-	-0.08	-	0.11	-	0.00	-	0.06	-
Distress from witnessing death	7.9 (2.1)	-	-0.06	-0.04	-	-0.11	-	0.06	-	-	-	-	-
Distress from uncertainty	7.6 (2.1)	-	-	0.00	-	-0.04	-	0.07	-	0.04	-	0.05	-
Psychiatric variables													
Depressive symptoms	2.5 (1.6)	-0.22**	0.04	0.00	-	-0.22**	0.10	-	-	-0.15*	-0.07	0.13	-
Anxiety symptoms	2.4 (1.6)	-0.41**	-0.44**	-0.40**	-0.29**	-0.46**	-0.36**	0.02	-	-0.35**	-0.41**	-0.01	-
PTSD symptoms	7.0 (3.3)	-0.30**	0.04	-0.28**	-0.25*	-0.45**	-0.12	-0.06	-	-0.18*	-0.12	-0.04	-
Burnout	2.8 (1.4)	-0.09	-	-0.09	-	-0.28**	0.02	-0.09	-	-0.07	-	0.12	-
Suicidal ideation	19 (10.7%)	-0.34**	-0.18**	-0.09	-	-0.36**	-0.12	-0.17*	-	-0.04	-	-0.18**	-0.09
Psychosocial variables													
Optimism	4.8 (1.2)	-0.06	-	0.03	-	0.06	-	0.19*	0.35**	0.06	-	0.09	-
Gratitude	4.8 (1.2)	0.18*	0.12	0.01	-	0.18*	0.03	0.06	-	0.19*	0.1	0.27**	0.29**
Presence of meaning in life	4.7 (1.4)	0.32**	0.28**	0.06	-	0.44**	0.41**	0.08	-	0.02	-	0.27**	-

													0.02
Search for meaning in life	4.6 (1.4)	0.02	-	0.15	-	-	-	0.03	-	0.07	-	0.28**	0.24**
						0.01							
R^2		0.50		0.27		0.54		0.23		0.39		0.24	
Mean (SD)		6.3 (1.9)		6.7 (2.0)		7.1 (2.1)		7.4 (1.9)		7.1 (2.3)		6.0 (2.4)	

¹ Two participants who chose “Other” were excluded from bivariate and regression analyses.

² Work experience was recoded into quartiles in bivariate and regression analyses. Means and standard deviations of each quartile are as follows: Q1: 14.7 (6.2); Q2: 40.9 (7.3); Q3: 99.4 (22.3); Q4: 229.9 (48.9).

³ Non-volunteer psychosocial support workers include psychologists (25.3%), social workers (17.4%), medical doctors (9.0%), psychiatrists (5.6%), and nurses (3.4%).

Note. PTSD, posttraumatic stress disorder. *r*, Spearman correlation coefficient. β , standardized coefficient. R^2 , total variance explained.

* $p < 0.05$, ** $p < 0.01$.