Received: 31 March 2023 | Accepted: 2 September 2023

DOI: 10.1111/aphw.12492

ORIGINAL ARTICLE

APPLIED PSYCHOLOGY: Health and Well-Being IAAP

Coping with a global crisis—Changes in worries about the Russo–Ukrainian War

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Abstract

Global crises, such as the Russo–Ukrainian War, can lead to worrying, which in turn can result in health problems when not positively coped with. This study investigates how the worries of Germans are related to general coping strategies. Three consecutive online surveys were distributed from the beginning of March until the beginning of May 2022. The surveys assessed participants' worries about the Russo–Ukrainian War and their use of four coping domains for the two preceding weeks. A total of 175 (54.3% female; $M_{age} = 33.3$, $SD = 13.6$, 18–66 years) participants completed all three questionnaires. Worries and coping (meaning-focused, problem-focused, social, and avoidance coping) declined over time. Cross-sectionally all coping domains, except meaning-focused coping, correlated positively with initial worries, indicating a higher use of coping strategies when worries were present. In line with this, the use of both social and avoidance coping declined over the course of the study when worries were reduced. Furthermore, a higher initial use of avoidance coping was associated with a stronger decline in worries. Worries and coping strategies both declined following the Russian invasion of Ukraine which suggests that worries and coping strategies adapt to one another over time.

KEYWORDS

avoidance coping, meaning-focused coping, problem-focused coping, social coping, stress

INTRODUCTION

With the Russian invasion of Ukraine on February 22, 2022, a period of peace on the European continent came to an end and a time of uncertainty for many countries and their inhabitants began. A military conflict is a dangerous and threatening situation (Murthy & Lakshminarayana, 2006), assumedly even more so when the involvement of one's own country seems possible. Under such circumstances, an increase in worry among the population is likely. One aim of this study, therefore, is to investigate how worries changed in Germans over the 2 month time period following the Russian invasion of Ukraine. A further aim of this study was to examine interindividual differences in four coping domains (meaning-focused, problem-focused, social, and avoidance coping; Baumstarck et al., 2017) and how they related to worry and changes in worry over time. Because specific coping strategies may not be equally efficient in every situation, we differentiate four broader domains of coping, namely, problem-focused coping, meaning-focused coping, social coping, and avoidance coping.

Worrying about the Russo–Ukrainian War

New, possibly dangerous situations, such as the Russian invasion of Ukraine, can lead to feelings of worry. Worrying is a relatively uncontrollable and unpleasant chain of thoughts and images that is triggered by a fear stimulus, in this study, the military conflict (Borkovec et al., 1983). Worrying is further characterized by an inward attention focus and concerns about potential outcomes of future events (Borkovec et al., 1983). From a broader theoretical perspective, worrying can also be seen as the result of a primary stress appraisal, such as that proposed in the transactional model of stress and coping by Lazarus and Folkman (1984). In this model, an individual assesses a stressor—such as potential outcomes of the Russian invasion of Ukraine—through a primary stress appraisal, categorizing it as positive, irrelevant, or distressing. A situation is considered stressful when its external or internal demands exceed the individual's perceived coping resources. Stressors can be further differentiated into appraisals of harm or loss, a possible threat, or a challenge. Whereas harmful stressors already inflict some sort of damage in the present, threatening stressors hold potential harm in the future; thus, worrying occurs when a situation is deemed threatening and could lead to harm in the future.

Past research indicates that worrying is a very common phenomenon in everyday life (Verkuil et al., 2007) and a certain amount of worrying in response to threatening life situations like the Russian invasion of Ukraine seems to be a healthy and normal response. Worrying can prepare individuals to cope with future problems (Borkovec et al., 1983). Because Germany is situated in Central Europe, the Russian invasion of Ukraine did not occur in its close vicinity. Nevertheless, there was great concern that the war might also spread. A certain amount of worrying about the Russo–Ukrainian War thus seems expectable in the German population. In interviews conducted in June and July 2022, the European Commission (2022) found that, in

comparison with the overall European population, more Germans were worried about the expansion of the war to other countries (41% vs. 33%) and possible shortages in the supply of energy and other goods (31% vs. 24%). On the other hand, Germans were similar to their European counterparts in worries about getting involved in the war (21% vs. 20%), a possible economic crisis (32% vs. 36%), or a potential nuclear war (22% vs. 25%). This makes clear that people in Germany, but also in other countries in Europe, were worried about the escalation of the Russo–Ukrainian War.

Although worrying might initially be a normal and healthy response, worrying can also have negative effects when it becomes chronic and is not successfully coped with. In line with this presumption are research findings that link excessive and problematic worrying with a higher prevalence of anxiety disorders, depression, and feelings of stress (Hong, 2007; Szabó, 2011). Several studies also differentiated different domains of worry, such as safety and health, achievement and economic, social, and meaning (Boehnke et al., 1998; Schwartz & Melech, 2000). In particular, worries about one's own person or loved ones (micro worries) in comparison with worries concerning society or the world (macro worries) are associated with poor mental health (see Boehnke et al., 1998; Schwartz & Melech, 2000).

In the present study, we focus on interindividual differences in coping strategies people use to deal with difficult situations and how these relate to worries (e.g. feelings of stress and hopelessness) regarding the Russo–Ukrainian War. People differ in their use of general coping strategies that enable them to adapt to novel, possibly harmful, life events. Studies that investigated worries during the early stages of the COVID-19 pandemic revealed that although levels of worry were high in the beginning, they also began to decline within only a few weeks (Bendau et al., 2021; Hetkamp et al., 2020). Whether a similar pattern will emerge for worries regarding the military conflict in Ukraine is a subject of investigation in the present study.

Coping strategies

Coping is defined as cognitive and behavioral efforts to handle a stressful situation that exceeds the individuals' resources to maintain or restore well-being (Lazarus & Folkman, 1984). Such efforts can include a wide range of different strategies (Carver & Scheier, 1989; Lazarus & Folkman, 1984). Although the Russian invasion of Ukraine per se objectively represents a similarly threatening situation for most European citizens, individuals differ in their appraisals of their abilities to cope with difficult situations and their choice of coping strategies. A popular and well-established questionnaire to assess different coping strategies is the brief COPE inventory, a short version of the original COPE inventory (Carver, 1997), that assesses 14 different coping strategies. However, as Skinner et al. (2003) pointed out, including a great number of different coping strategies makes it difficult to compare and summarize research findings. Researchers have thus tried to reduce the coping strategies of the COPE inventory into broader domains of coping. In this study, we focused on four global domains that have emerged from several studies (Baumstarck et al., 2017; Litman, 2006; Saalwirth & Leipold, 2021), namely, meaning-focused coping, problem-focused coping, social coping, and avoidance coping.

Problem-focused coping targets the specific problem itself directly, for example, through plans to change the current situation. In previous research (Göral et al., 2006; Saalwirth & Leipold, 2021; Zacher & Rudolph, 2021), it was associated with stress-related growth, better quality of life, and less worrying.

Meaning-focused coping, on the other hand, aims to reinterpret the stressful situation in a positive way, for example, by accepting it or taking it with humor. The problem itself hereby remains unchanged. Similarly, to problem-focused coping, meaning-focused coping was also positively related to better quality of life, better well-being, and less worrying in past cross-sectional research (Hofstetter et al., 2005; Moskowitz et al., 2009; Saalwirth & Leipold, 2021).

Social support has long been recognized as another important protective factor in coping with stress (Taylor, 2011). For example, several studies found a lack of social support to be associated with an elevated risk for impaired emotional health during the COVID-19 pandemic (Boyraz et al., 2020; Bu et al., 2020) and more social support to be associated with less stressful experiences and distress (Muñoz-Martínez & Naismith, 2022; Ye et al., 2020). In addition, social support was able to reduce negative effects of war-related trauma (Murthy & Lakshminarayana, 2006) and foster posttraumatic growth (Prati & Pietrantoni, 2009); however, social coping was also associated with higher levels of negative affect (Zacher & Rudolph, 2021) and more worrying during the COVID-19 pandemic (Saalwirth & Leipold, 2021).

Unlike the other strategies, avoidance coping has mostly been associated with negative outcomes (Littleton et al., 2007), even though there are also circumstances in which it can be useful, as Lazarus (1983) pointed out. Avoidant coping strategies include, for example, self-distraction, denial, or substance use, all of which are attempts to escape a negative situation. In recent studies, during the COVID-19 pandemic, avoidance coping was associated with lower well-being and more worrying (Saalwirth & Leipold, 2021; Zacher & Rudolph, 2021), confirming previous research findings linking avoidance coping with disadvantageous outcomes. In the present study, we investigate whether worrying about the Russo–Ukrainian War decreases or increases in people who use these coping strategies.

Because most of the coping research has focused on the effectiveness rather than the frequency of the use of coping strategies, to date, little is known about the frequency with which these four coping domains are used. In a recent study by Saalwirth and Leipold (2021), problem- and meaning-focused coping were found to be used more often than social coping and avoidance coping during the COVID-19 pandemic. Whether a similar pattern will emerge during the weeks after Russia invaded Ukraine remains to be investigated.

Aims of the study

Previous research findings link negative health outcomes to worry that is not efficiently coped with. This underlines the importance of investigating peoples' worries and their coping efforts during times of a global crisis, such as the Russo–Ukrainian War. The first aim of this study was therefore to investigate how worries about the Russo–Ukrainian War and the general use of four coping domains (meaning-focused, problem-focused, social, and avoidance coping) developed in the weeks following the beginning of the war. Because the development of the situation was not foreseeable at the time of the data collection, no assumptions were made as to how worries about the Russo–Ukrainian War and general coping efforts would change over time.

The present design with three measurement points allows latent growth modeling that can distinguish change correlations and predict change through initial values (intercepts). Change correlations show whether changes in coping use (slope) are associated with changes in worry (slope). Predictions through the intercept indicate the protective function of coping, for example, whether a high initial degree of coping predicts the decrease in worry (slope). Thus, the

second aim of this study was to investigate how changes in the four different coping domains were related to changes in worries about the Russo–Ukrainian War over time. We expected coping efforts to decrease over the course of the study if worries declined and to increase if worries rose because one can expect that the need to cope is tied to the existence of worries. A further question is whether the degree of worrying about the Ukraine conflict decreases depending on the individual's initial level of coping strategies. Because problem- and meaning-focused coping as well as social coping were mainly associated with positive outcomes in previous cross-sectional research, we also expected a higher initial use of those coping strategies (intercept) to predict a stronger decrease (slope) in worrying over time. For a higher use of avoidance coping (intercept), we expected a weaker decrease (slope) in worries over time, because avoidance coping has often been associated with disadvantageous health outcomes.

Finally, we explored the frequency with which the coping domains were used during the weeks after the Russian invasion of Ukraine; this is the third aim of the study. Here, we aimed at comparing our results to previous research by Saalwirth and Leipold (2021), in which problem- and meaning-focused coping were used more often than social and avoidance coping.

METHODS

Data were collected using a panel design consisting of three consecutive online questionnaires distributed 2 weeks apart, beginning in March and ending at the beginning of May 2022 (see Figure 1). The study was approved by the institutional Ethics Committee of the University of the Bundeswehr Munich, and all participants gave informed consent. No monetary compensation was given to the participants. The distribution of the first questionnaire started 11 days after the military conflict in Ukraine began. All three questionnaires, except for the sociodemographics section, were identical (see Figure 1). They assessed worries about the Russo–Ukrainian War and the use of different coping strategies over the preceding 2 weeks. During the first time period, German news was dominated by negative reports about the Russo–Ukrainian War, such as Russian attacks on Ukrainian civilians or the growing pressure on the capital Kiev. Reports about war crimes committed by Russian soldiers in the region of Butscha prevailed during the second time period. An attack on a nuclear power plant and attempts to evacuate Ukrainian employees were reported during the third time period. Overall though, the amount of news about the Russo–Ukrainian War in Europe decreased over the course of the study, as a report on the Swiss media coverage supports (fög – Forschungszentrum für Öffentlichkeit und Gesellschaft, 2022).

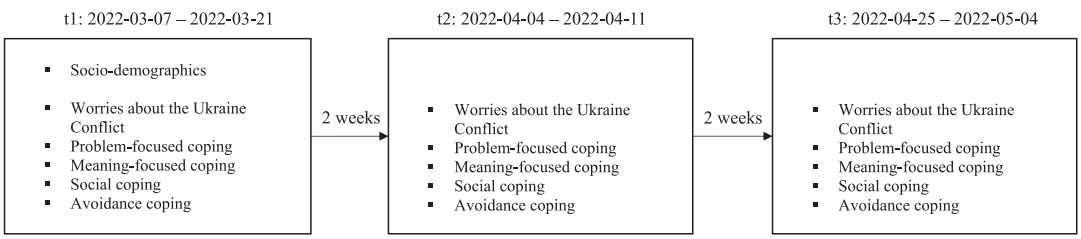

FIGURE 1 Study design.

Participants

A total of 513 participants completed the first online questionnaire (t1) that had been distributed via social media and university mailing lists in Germany. Out of the 513 participants, 246 participants (48%) who could be matched to their data from t1 filled out the second questionnaire (t2); from these, 179 (35%) answered the third questionnaire (t3).

To control for systematic patterns of attrition, participants who had completed all three questionnaires ($N = 179$) were compared with drop-outs ($N = 334$) on demographics (age, gender, education, and household income) and the relevant variables (worry and the four coping domains). The drop-out group did not differ from the study group in any of the variables, except for age (see Table S1). Participants who dropped out were slightly younger ($F(1,511) = 4.528$, $M\text{Diff}_{\text{age}} = 2.78$, $p = .034$) than participants who had participated at all three time points.

In addition, four of the remaining 179 participants had to be eliminated because of missing data or being defined as outliers. Outliers were defined as scores above or below three standard deviations from the mean value or with a significant Mahalanobis distance (Tabachnick et al., 2007). The remaining sample consisted of 175 participants between 18 and 66 years with a mean age of 33.3 years ($SD = 13.6$). A total of 95 (54.3%) participants were female, 79 participants were male (45.1%), and one participant gave no information (0.6%). In terms of education, 71 (40.6%) participants had a university degree, 85 had a high school degree (48.6%), and 19 had less than 12 years of schooling (10.8%). Participants' professions represented a variety of different work sectors. Of the participants, 12.1% earned less than 1000€ per month (low-income earners), 69.6% earned up to 3000€ a month, and 17.7% earned more than 3000€ a month. The remaining one participant (0.6%) provided no information. Nine participants (5.1%) reported having close personal contact with Ukrainian citizens.

Measurement instruments

In the three online questionnaires, we gathered information about the participants' sociodemographics as well as the following measures.

Worries about the Russo–Ukrainian War

At the time our study began, no questionnaires specifically assessing worries about the military conflict in Ukraine had been published. We, therefore, used an adapted version of the Dunny Worry Questionnaire (Freeman et al., 2020), in which participants were asked to rate on a 5-point Likert scale how worried they had been about the Russo–Ukrainian War in the past 2 weeks (1 = *none of the time*, 5 = *all of the time*). For example, the item "I've been worrying a lot" was adapted to "I've been worrying a lot about the Ukraine conflict." A mean score of all 10 items was computed. The reliability of the scale was good ($\alpha_{t1} = .89$, $\alpha_{t2} = .92$, $\alpha_{t3} = .93$).

Coping strategies

The Brief-COPE from Carver (1997) was used to assess the general use of different coping strategies over the previous 2 weeks. The Brief-COPE is a short version of the COPE inventory, a

frequently used questionnaire on coping (Kato, 2015) consisting of 14 different coping strategies, each measured by two items (Carver, 1997). The scale *self-blame* was excluded, due to inappropriateness in the context of the Ukraine conflict. The scales *religious coping* and *behavioral disengagement* did not fit our proposed model of higher order coping strategies and were therefore also not included. The remaining 11 coping strategies of the Brief-COPE were reduced into four higher order coping strategies, similar to previously proposed models by Baumstarck et al. (2017) and Saalwirth and Leipold (2021). *Problem-focused coping* consisted of the scales for active coping and planning ($\alpha_{t1} = .73$, $\alpha_{t2} = .73$, $\alpha_{t3} = .76$); *meaning-focused coping* of the scales for acceptance, positive reframing, and humor ($\alpha_{t1} = .75$, $\alpha_{t2} = .74$, $\alpha_{t3} = .75$), *social coping* of the scales for instrumental support, emotional support, and venting ($\alpha_{t1} = .81$, $\alpha_{t2} = .83$, $\alpha_{t3} = .86$); and *avoidance coping* of the scales for self-distraction, denial, and substance use ($\alpha_{t1} = .60$, $\alpha_{t2} = .58$, $\alpha_{t3} = .68$). For each of the four coping domains, a mean value of the items in the respective scale was calculated.

Statistical analysis

To investigate how worry and the four coping domains changed over time, as well as which coping strategies were used most often, repeated-measures ANOVAs (analysis of variance) with Bonferroni-adjusted post hoc analyses and a significance level of $p < .01$ (adjusted for multiple testing) were used to analyze the differences in means. Latent growth analyses were used to test whether worry and coping strategies were associated over time. The descriptive statistics of all variables can be found in Table 1.

TABLE 1 Descriptive statistics of all variables.

	M	*SD*	Min	Max	Skewness	Kurtosis
Worry t1	2.75	0.85	1.00	5.00	0.08	−0.35
Worry t2	2.29	0.83	1.00	5.00	0.71	0.24
Worry t3	2.02	0.82	1.00	4.90	1.13	1.09
Problem-focused coping t1	2.50	0.70	1.00	4.00	0.13	−0.47
Problem-focused coping t2	2.35	0.68	1.00	4.00	0.05	−0.68
Problem-focused coping t3	2.28	0.69	1.00	4.00	0.19	−0.36
Meaning-focused coping t1	2.50	0.65	1.00	4.00	−0.06	−0.64
Meaning-focused coping t2	2.41	0.65	1.00	4.00	0.22	−0.45
Meaning-focused coping t3	2.34	0.65	1.00	4.00	0.21	−0.22
Social coping t1	1.98	0.65	1.00	4.00	0.70	0.40
Social coping t2	1.89	0.65	1.00	4.00	0.77	0.16
Social coping t3	1.81	0.63	1.00	3.67	0.78	0.27
Avoidance coping t1	1.71	0.43	1.10	3.17	0.77	0.80
Avoidance coping t2	1.59	0.39	1.10	3.17	0.77	1.17
Avoidance coping t3	1.57	0.43	1.00	3.50	1.22	2.78

Note: $N = 175$.

TABLE 2 Bivariate correlations at t1.

	1	2	3	4	5	6	7
1. Worry t1	1						
2. Problem-focused coping t1	.27***	1					
3. Meaning-focused coping t1	−.18*	.13	1				
4. Social coping t1	.32***	.46***	.12	1			
5. Avoidance coping t1	.35***	.28***	.11	.36***	1		
6. Age	.19*	.09	−.26**	−.06	−.10	1	
7. Gender	.21**	.02	−.28**	.22**	.11	.19*	1

Note: $N = 175$; gender: 1 = male, 2 = female; one participant reported diverse and was not included in the correlation with the gender variable.
*$p < .05$, **$p < .01$, and ***$p < .001$.

We included age and gender as control variables in the proposed models because they had shown significant correlations with the relevant variables (see Table 2). All calculations were conducted using IBM SPSS Statistics, version 28, and Jamovi, version 2.3.13.

RESULTS

The results are presented in three main steps. First, we examine the changes in worry and the four coping domains. Second, we investigate which of the coping strategies were used most often, and third, we report the proposed latent growth models, one for each coping strategy.

Changes of worry and coping over time

To examine how worries change over time, we tested whether worries differ in their mean values between t1, t2, and t3. The repeated-measures ANOVA was significant, $F(1.69, 293.31) = 107.81$, $p < .001$. Because the Mauchly's test indicated a violation of the sphericity assumption, a Greenhouse–Geisser correction was applied. A Bonferroni-adjusted post hoc analysis revealed a significant reduction in worry for all three measurement times, with a stronger reduction from t1 to t2 than from t2 to t3 (Table 3). The effect size for the overall reduction from t1 to t3 indicated a large effect.

In addition, we investigated the developments in the different coping domains. We tested whether the aforementioned variables differed in their mean values between t1, t2, and t3. The repeated-measures ANOVAs for all coping domains were significant: problem-focused coping, $F(2, 348) = 9.03$, $p < .001$; meaning-focused coping, $F(2, 348) = 6.37$, $p = .002$; social coping, $F(2, 348) = 7.03$, $p = .001$; and avoidance coping $F(1.87, 325.96) = 3.82$, $p = .023$. Because a Mauchly's test indicated a violation of the sphericity assumption for the calculation for avoidance coping, a Greenhouse–Geisser correction was applied. The Bonferroni-adjusted post hoc analyses showed significant reductions for all coping strategies from t1 to t3 (see Table 3). For problem-focused and avoidance coping, a reduction between t1 and t2 was found as well. The effect sizes were small to medium. None of the coping domains showed a significant decrease from t2 to t3.

TABLE 3 Mean difference of worry and the four different coping strategies for t1, t2, and t3.

	t2				t3			
	***M*Diff**	**95% CI**	***p***	**Cohen's *d***	***M*Diff**	**95% CI**	***p***	**Cohen's *d***
Worry t1	0.45	[0.33; 0.57]	≤.001	0.55	0.73	[0.61; 0.85]	≤.001	0.87
Worry t2					0.15	[0.15; 0.39]	≤.001	0.33
Problem t1	0.14	[0.02; 0.27]	.022	0.21	0.22	[0.09; 0.35]	≤.001	0.32
Problem t2					0.05	[−0.05; 0.21]	.405	0.11
Meaning t1	0.09	[−0.02; 0.20]	.150	0.14	0.16	[0.05; 0.27]	.001	0.25
Meaning t2					0.07	[−0.04; 0.18]	.335	0.11
Social t1	0.10	[−0.01; 0.21]	.107	0.15	0.17	[0.06; 0.28]	≤.001	0.27
Social t2					0.08	[−0.04; 0.19]	.310	0.12
Avoidance t1	0.12	[0.05; 0.19]	≤.001	0.29	0.14	[0.07; 0.21]	≤.001	0.35
Avoidance t2					0.02	[−0.05; 0.09]	1.000	0.06

Note: $N = 175$.
Abbreviations: Avoidance, avoidance coping; Meaning, meaning-focused coping; Problem, problem-focused coping; Social, social coping.

Latent growth analyses

Next, we used latent growth analyses to investigate whether initial levels of worry and coping (intercepts) predicted the changes in worry and coping (slopes) and whether these were associated with each other. We calculated a separate model for each of the coping domains, resulting in four latent growth analyses similar to those proposed by Brailean et al. (2017). Each of the models was built by setting the loadings of each factor to 1 for the intercept latent variable and the slope parameters to 0, 1, 2 in line with the chronological spacing of the measurements. The latent variables representing the intercept and slope were allowed to correlate and the slopes of worry and the four coping domains were regressed on the intercepts of worry and coping domain. We used the mean values of worry and the coping domains at t1, t2, and t3 for each time point to estimate the latent constructs. In addition, to control for the influence of age and gender on the results, we included both as manifest variables that were allowed to correlate with the latent variables in the models. See Figure 2 for results. Indices of fit indicated an acceptable model fit for all four models.

All four coping domains at t1 were associated with worry at t1. More problem-focused, social, and avoidance coping and less meaning-focused coping were related to less worry. As expected, the decrease in worry was significantly associated with the decrease in avoidance and social coping; specifically, the stronger the decrease in worry, the stronger the decrease in avoidance and social coping. Similar results for problem-focused coping and meaning-focused coping were not found. Except for avoidance coping, none of the intercepts of the coping domains was able to predict the change in worry over time. For avoidance coping, the more people initially coped using avoidance, the stronger their worries decreased over the time span, which is contrary to our hypothesis. Furthermore, initial levels of worry did not predict the slope of the four coping domains. In addition, older participants were more worried than younger participants and showed less meaning-focused coping. Women were more worried and used

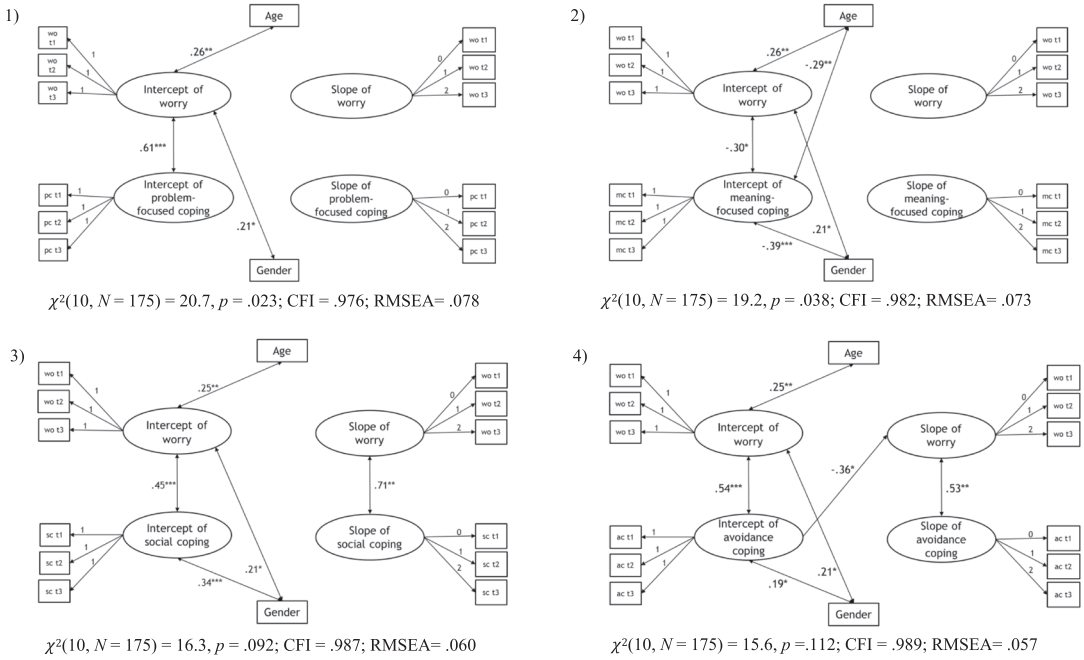

FIGURE 2 Latent growth analyses of worry and (1) problem-focused coping, (2) meaning-focused coping, (3) social coping, and (4) avoidance coping. $N = 175$; gender: 1 = male, 2 = female; one participant reported diverse and was indicated as missing; *$p < .05$ **$p < .01$ ***$p < .001$; only significant paths are shown. ac, avoidance coping; CFI, comparative fit index; mc, meaning-focused coping; pc, problem-focused coping; RMSEA, root-mean-square error of approximation; sc, social coping; wo, worry.

more social and avoidance coping than did men. All the described relationships remained stable and significant when we repeated the analyses without the nine participants that had reported having close personal contact with Ukrainian citizens.

Use of coping strategies

We further assessed whether certain coping domains were used more frequently than others and if this pattern changed over time. Again, the three repeated-measures ANOVAs for all three measurement times were significant: t1, $F(2.66, 462.56) = 92.22$, $p < .001$; t2, $F(2.59, 451.09) = 98.25$, $p < .001$; and t3, $F(2.61, 453.66) = 90.53$, $p < .001$. Because the Mauchly's test indicated a violation of the sphericity assumption, a Greenhouse–Geisser correction was applied for all three calculations. The Bonferroni-adjusted post hoc analyses revealed that meaning-focused and problem-focused coping were used most frequently, followed by social coping and avoidance coping. This pattern was the same for t1, t2, and t3 (see Table 1 for mean values). All comparisons yielded statistically significant results, except for the mean value differences between problem-focused and meaning-focused coping, which showed no difference at either t1, t2, or t3 and were therefore used equally often.

Discussion

The results of this study show that levels of worry declined in the weeks following the Russian invasion of Ukraine. Interestingly, the reduction in worry was stronger in the first time interval than in the second time interval. Because one would not expect that levels of worry would drop to zero as long as the conflict was still ongoing, it is possible that the more time passed, the closer the participants approached a level of existing, but not dominating feeling of worry. Although worry clearly decreased over time, the processes underlying the decrease remain unclear. For example, it is possible that the participants simply habituated to the new situation, as Hetkamp et al. (2020) suggested for similar findings during the beginning of the COVID-19 pandemic. However, future research is needed on how comparable the effects of different global crises on the population are. For example, although the COVID-19 pandemic and the Russo–Ukrainian War share similar features such as the threat to one's own safety or possible negative effects on the economy and one's own financial situation, they also differ in certain ways. Whereas the threat from the COVID-19 pandemic is a natural phenomenon and an invisible threat only indirectly influenced by humans, the Russo–Ukrainian War is man-made and an overt threat. Furthermore, it is also possible that a reduction in media content concerning the Russo–Ukrainian War could be responsible for the decline in worry; for example, higher media consumption was associated with more worrying during the COVID-19 pandemic (Schmidt et al., 2021).

Furthermore, a decrease in the primary stress appraisal of the threat potential for Germany might also explain our results, because it became foreseeable that imminent German participation in the war in the near future was unlikely. Whether worries about the Russo–Ukrainian War will decrease or reach a plateau, and how specific events in the ongoing military conflict possibly influence these, should be investigated in future research.

The latent growth analyses revealed that initial levels (intercept) of worry were associated with initial levels (intercept) of all four coping domains. Participants with higher levels of worry at the beginning of the data collection showed more problem-focused, social, and avoidance coping and less meaning-focused coping than participants with lower levels of worry. In general, in the presence of worry, it can be assumed that the use of coping strategies increases. This would explain the positive correlations with problem-focused, social, and avoidance coping. The question arises why a greater use of meaning-focused coping was associated with less worrying in the beginning. A possible explanation might be that meaning-focused coping led to a less threatening appraisal of the situation and helped participants to reevaluate their worries as an experimental study by Schäfer et al. (2020) suggested. The other three coping domains may unfold their possible positive effects later in the coping process. Reevaluating or accepting the situation, or taking it with humor, might be helpful, particularly in the early stages of coping with a global crisis. This explanation is supported by the initially lower level of stress appraisal and the fact that the initial use of meaning-focused coping did not predict the temporal change of worry over time. Although meaning-focused coping seems to be a useful coping strategy, it also holds the danger of underestimating a possibly hazardous situation. Future research is needed to further explore the possible negative consequences of meaning-focused coping.

Our results further demonstrated that the general use of coping strategies showed a decline in all four coping domains. In combination with the decrease in worry, these findings might be explained by a decline in the need for coping. The less people were worried, the less coping was needed to maintain or restore well-being, which can be explained by the transactional model of stress and coping (Lazarus & Folkman, 1984). Furthermore, all coping strategies developed in a

similar way, which means that the order in the frequency of the use did not change over time. For all three time points, meaning-focused and problem-focused coping were used most often, followed by social coping and avoidance coping; this is in line with previous findings from Saalwirth and Leipold (2021), who investigated coping strategies during the COVID-19 pandemic. This indicates that this distribution of general coping tendencies appears to be relatively stable across different threatening global events.

In addition, as expected, the latent growth models revealed that a decrease (slope) in worry was associated with a decrease (slope) in social and avoidance coping, which supports our assumption that the less people were worried, the less coping was needed to maintain or restore well-being (see above). This indicates that participants might have specifically used more social support or avoided the situation to handle their worries about the Russo–Ukrainian War and stopped doing so when their worries declined. The slopes of meaning-focused, as already mentioned above, and problem-focused coping were not associated with the slopes of worry. The absence of a correlation between meaning-focused coping and worries may be explained by a less threatening appraisal of the situation, leading to a reevaluation of initial worries. However, the reason behind the lack of correlation for problem-focused coping remains unanswered. It could be that problem-focused coping is specifically associated with particular domains of worry, such as safety and economics (Schwartz & Melech, 2000), which were not distinguished in our current study.

Interestingly, avoidance coping is often viewed as a negative form of coping that sometimes even has adverse effects, but our study did not confirm this. Specifically, more initial avoidance coping (intercept) predicted a stronger decline (slope) in worry. This implies that denying or avoiding dealing with the Russo–Ukrainian War might benefit the assumed habituation processes. However, whether this coping domain would be helpful in the long run needs to be further investigated. In addition, a distinction between positive distraction and avoidance should be made in future research. Unlike avoidance, positive distraction was related to positive outcomes in a study by Waugh et al. (2020). In contrast to avoidance coping, the intercepts of social coping did not predict the slope of worry. Although shortly after the Russian invasion of Ukraine, people sought more social support when they were more worried, this apparently did not affect the change in worry over time.

Furthermore, although problem-focused coping was used more frequently when participants showed higher levels of worry at t1 (indicating that the more worries were present, the more problem-focused coping was used), initial levels of problem-focused coping (intercept) showed no association with the temporal change (slope) of worry. This implies that problem-focused coping might not be the coping strategy of choice to deal with worries about the Russo–Ukrainian War, even though it is often described as a helpful coping strategy. Even if problem-focused coping was initially used more often when more worries were present, the use of it at t1 (intercept) showed no relation to the development (slope) of worries. Therefore, participants might have "tried" using problem-focused coping to cope with worries, but this approach was not successful. Problem-focused coping is mostly effective for threatening situations that can possibly be controlled by the individual (Folkman & Lazarus, 1980; Folkman et al., 1986). Being able to control the situation, though, was not really possible for the participants in our study, because they were not directly involved in the military conflict.

Notably, all associations between worry and coping were independent of age and gender, although both age and gender were associated with initial levels of worry. Older participants were on average more worried than younger participants. This finding is in contrast to previous findings, in which older people reported better overall well-being (Stone et al., 2010) and

experienced less anxiety during the COVID-19 pandemic (Pieh et al., 2020). A possible explanation for our findings might be that older generations have experienced more military conflicts during their lifetime than the younger generations who might not be able to imagine the scope of the situation and therefore underestimate it. In addition, in our sample, women were more worried than men. Previous research describes women to be more likely to experience higher levels of worry (Stavosky & Borkovec, 2014), which is in line with our findings. Women also used more social and avoidance coping, whereas men tended to use more meaning-focused coping, which was associated with lower initial levels of worry. This might explain the gender differences in worry in our study.

Limitations

This research demonstrates how people feel and react to a new threatening global crisis like the Russo–Ukrainian War and extends the knowledge about how people successfully or unsuccessfully cope with threatening global events, but the study also has certain limitations. First, our data consist of only three measurement points within a short time range; thus, the long-term effects of the four different coping domains could not be investigated. In addition, we did not investigate the possible effects of the simultaneous use of multiple coping strategies, although previous research has found higher levels of worry to be related to a higher degree of polyregulation (Lischetzke et al., 2022). Also, other forms of coping strategies that we did not assess may be able to reduce worrying. For example, a study during the Ebola outbreak in 2014 showed that third-person self-talk was associated with a reduction in worrying (Kross et al., 2017). Further, we had too few data points to control whether participants' worry reaches a plateau. We also were not able to investigate causal relationships or make predictions for future outcomes because not all possible confounding factors could be controlled. Nevertheless, in the future, a broader set of control variables could be implemented, for example, personality factors, health status, job security, or other variables that may influence people's worries. We also did not have enough data to investigate whether individuals with close personal contacts in Ukraine were more burdened. Another possible limitation was that our study sample consisted exclusively of German participants, many with a higher level of education; this limits generalizations to the German population as well as to populations of other European countries. In addition, worries of people could well differ in countries that are located closer to Russia or Ukraine or are in other ways more involved in this military conflict. Participants' responses may have been influenced by the repeated administration of the questionnaire within a relatively short time frame. Due to the repetition, for instance, participants may have responded at subsequent measurement points with reduced thoroughness or reduced effort. Finally, our data relied solely on self-reports. Participants' responses may have also been influenced by their momentary cognitive and emotional states. In future studies, it would be advantageous to confirm some of our results with alternative methods.

Conclusions and outlook

In summary, our study revealed a significant reduction in four coping strategies (meaning-focused, problem-focused, social, and avoidance coping) and in global worries about the Ukraine conflict over the course of the study. The decline in two coping strategies, social and

avoidance coping, was also significantly related to a decline in worries. In addition, higher use of avoidance coping at the beginning of the study was associated with a decline in worry over time. Based on these findings, future research could do a more fine-grained investigation of specific worries in the population. Especially the differentiation between objects and domains of worry about the Ukraine conflict, how these relate to indicators of mental health, and whether these are influenced by the choice of different coping strategies could be investigated in future research. Possible positive effects of worries should be considered as well because nonclinical worrying can also foster adaptive behavior, information-seeking, and motivation to act, as studies investigating worries about climate change have shown (Ojala et al., 2021).

Only a few weeks after the Russian invasion of Ukraine began, people's worries and general coping efforts strongly decreased, indicating a possible habituation process to this new threatening crisis. The decrease in worry was predicted by a high degree of initial avoidance coping and associated with the decrease in social and avoidance coping. The present study examined the processes and interactions between general coping tendencies and worry about a social crisis and showed possible protective effects of avoidance coping. This coping strategy has often been found to be dysfunctional in previous research, but here, it was protective in the short-term regulation of worry. The average frequency of use, however, was rather low. Together with the cross-sectional results showing that meaning-focused coping is correlated with less worry, this study shows how people regulate their emotions over time in a global crisis situation. To what extent a low level of worry is appropriate or may be an underestimation of risk remains an open question.

ACKNOWLEDGMENTS

We would like to thank Amy Michéle-Malkowsky for valuable comments and discussions. Open Access funding enabled and organized by Projekt DEAL.

CONFLICT OF INTEREST STATEMENT

The authors report that there are no competing interests to declare.

DATA AVAILABILITY STATEMENT

The data supporting the findings of this study are available from the corresponding author Saalwirth, C. on request. Raw data were generated at the University of the Bundeswehr Munich.

ETHICS STATEMENT

The study was approved by the institutional Ethics Committee of the University of the Bundeswehr Munich.

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: Saalwirth, C., & Leipold, B. (2023). Coping with a global crisis—Changes in worries about the Russo–Ukrainian War. *Applied Psychology: Health and Well-Being*, 1–17. https://doi.org/10.1111/aphw.12492