

RESEARCH ARTICLE

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The Moderating Role of Demoralization on the Association Between Exposure to War and Posttraumatic Stress Symptoms Among Israeli Civilians in Reaction to the October 7 War: A Longitudinal Study

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ABSTRACT

Background: During wartime, many people experience distress, uncertainty, helplessness and a lack of control. These negative feelings are at the root of demoralization symptoms.

Objectives: The present prospective study examined the impact of exposure to war and demoralization symptoms on PTSS 6 months later.

Methods: Participants were 338 Israeli citizens with indirect war exposure. Participants answered questionnaires on exposure to war, demoralization and PTSS at two time points (4 weeks and 6 months after the onset of the October 7 war).

Results: The study revealed that higher exposure to war (Time 1) was associated with higher levels of demoralization symptoms (Time 1) and PTSS (Time 2). Moreover, the moderation analysis indicated that the impact of exposure to war on PTSS was significant only for medium ($b = 4.279$, $SE = 1.33$, $p < 0.001$) and high ($b = 8.304$, $SE = 1.88$, $p < 0.001$) levels of demoralization.

Conclusion: Demoralization symptoms and PTSS are likely to occur during wartime. However, war exposure alone does not explain PTSS; it is contingent on demoralization levels. Demoralization shortly following the outbreak of war appears to be a predictor of PTSS. This finding suggests that screening for demoralization with a brief simple questionnaire might be a useful clinical tool to identify individuals in the short term who may have increased risk of PTSD in the long term.

1 | Introduction

Demoralization symptoms can be an underlying factor in psychopathology, prodromal stage of mental illness or trigger for exacerbation of acute psychiatric distress symptoms (de Figueiredo 2013). Demoralization is an existential condition that encapsulates many negative feelings (e.g., incompetence, hopelessness and helplessness) experienced by people dealing with stress (Clarke and Kissane 2002; Connor and Walton 2011). The main attribute of demoralization is the diminished ability

of individuals to respond to stressors and incapacity to perform tasks in a stressful situation, resulting in pervasive uncertainty and doubts about the future (Cockram, Doros, and de Figueiredo 2009; de Figueiredo 1993).

Frank (1961) conceptualized demoralization as a distinct mental state for the first time, describing a cluster of symptoms—primarily persistent feelings of subjective incompetence or failure to meet personal or others' expectations and an inability to cope and solve problems. Although various definitions of

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Summary

- Individuals frequently experience demoralization syndrome during wartime.
- Demoralization soon after the onset of war is a good predictor of PTSS.
- Recognizing and treating demoralization early is crucial to prevent its progression into more complex psychological issues.

What Is Known on the Subject?

- During periods of war, individuals often face distress, uncertainty, feelings of helplessness and a lack of control.
- These adverse emotions underlie demoralization symptoms.

What the Paper Adds to Existing Knowledge

- The present study contributed to the existing literature concerning predictors of long-term PTSS, providing insight into the impact of exposure to war and demoralization on PTSS.
- Demoralization symptoms and its impact on PTSS had not been previously examined in the context of war exposure.

What Are the Implications for Practice?

- Demoralization symptoms and PTSS are likely to occur during wartime.
- However, war exposure alone does not explain PTSS; it is contingent on demoralization levels.
- Demoralization shortly following the outbreak of war appears to be a good predictor of PTSS.
- This finding suggests that screening for demoralization with a brief simple questionnaire might be a useful clinical tool to identify individuals in the short term who may have increased risk of PTSD in the long term.

demoralization have been proposed since, they all include two main distinct components: personal distress and subjective incompetence (Clarke and Kissane 2002; Fava et al. 2007; Schmale and Engel 1967). Although personal distress is also experienced in cases of depression and other mental states (e.g., grief and anxiety), subjective incompetence is considered the clinical hallmark of demoralization. It entails a perceived incapacity to perform tasks appropriately in stressful situations (Cockram, Doros, and De Figueiredo 2009; de Figueiredo and Frank 1982; de Figueiredo and Gostoli 2013).

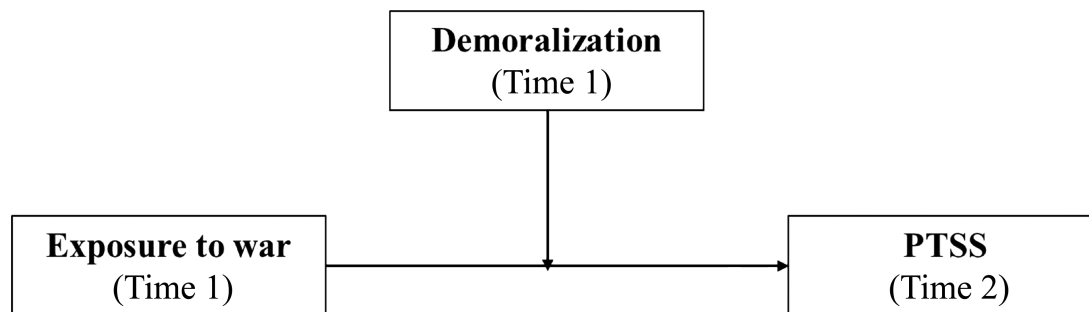
Many practitioners are unfamiliar with the concept of demoralization; it has been often and mistakenly diagnosed as depression (Clarke and Kissane 2002; Clarke et al. 2000). Demoralization and depression have two major distinguishing factors, although they share some similarities and may coexist (Koo et al. 2018). The first factor is loss of motivation, which inhibits individuals with depression from acting or improving their situation—even if a solution is available (see DSM-5; American Psychiatric Association 2013). Inhibition in depression results from decreased motivation, even when

the appropriate action is clear and known. However, for demoralized individuals, motivation can be high, but action can be hindered due to self-perceived incompetence. The second distinguishing factor is the possibility of experiencing pleasure. Depression involves a pervasive sense of anhedonia and apathy that results in loss of both anticipatory and consummatory pleasure, whereas demoralization only results in a loss of anticipatory pleasure. Therefore, demoralized individuals can experience short-term enjoyment of life in a way that anhedonia in depression does not allow (de Figueiredo and Gostoli 2013). Unlike many other mental states (e.g., depression), demoralization is a relatively new phenomenon; therefore, little is known about its impact over time.

Consequences of wartime adversities are usually examined in terms of acute stress symptoms, acute stress disorder, post-traumatic stress symptoms (PTSS) or posttraumatic stress disorder (PTSD; Jain et al. 2022; Palgi et al. 2024; Sowan and Baziliansky 2024; Stein et al. 2021). During wartime, many people experience a sense of uncertainty, helplessness and a lack of control, which are at the root of demoralization. This frequent and severe outcome of stressful situations (Connor and Walton 2011; Kissane, Clarke, and Street 2001) has been rarely examined relative to wartime (Erbes et al. 2012). Very few studies have examined the relationship between demoralization and PTSD. In the only longitudinal study on disaster-related PTSD, Kohn (2013) found demoralization to be a useful concept to examine the long-term outcomes of disasters. The study revealed that increased demoralization was significantly associated with PTSD at 2 months and 2 years. In addition, increased demoralization was associated with increased risk of PTSD chronicity. Moreover, decreased demoralization was associated with PTSD remission.

On 7 October 2023, the Islamic resistance movement Harakat al-Muqawama al-Islamiya, known familiarly as Hamas, attacked Israel from the Gaza Strip in what became known as the October 7 war (Britannica 2024). The assault killed soldiers stationed along the border and 1400 Israeli civilians, among them infants and children, in settlements near the Gaza Strip. Missile attacks by Hamas also affected cities in Israel. People were killed or injured and houses were demolished. Among 239 Israelis kidnapped by Hamas were infants, children and teenagers, adults, soldiers, older adults and people with chronic illnesses.

This exposure to trauma affected Jewish and Arab Israeli citizens, leading to experiences of pain, grief, shock, fear and uncertainty about how to live in and defend Israel. Previous studies referred to three ‘war circles’ (Cohen 2008; Sowan and Baziliansky 2024; Yahav and Cohen 2007). The first war circle relates to direct exposure to physical attacks (Ayalon, Cohn-Schwartz, and Sagi 2024; Cohen 2008; Yahav and Cohen 2007). The second war circle features those who faced missile barrages, causing high risk to their health and property, along with residents who had family members who were injured or killed and those who experienced income or property damage (Sowan and Baziliansky 2024). The third war circle involves those affected by the overall threat of war, whose exposure mainly occurred via the media; many people in this circle also experienced financial challenges (Cohen 2008; Sowan and Baziliansky 2024;



Yahav and Cohen 2007). The present study focused on indirect war exposure, which varied for citizens throughout Israel, demarcated by second and third war circles (inclusion areas limited to Lower Galilee, Eilat and Acre in the north to Herzliya in the centre). People in these two war circles, including Jews and Arabs alike, faced harm.

In summary, demoralization is an existential experience that develops following stressful situations and influences how individuals deal with stress, but it has not been extensively studied, especially in wartime. A deeper understanding of how demoralization interrelates with the stress resulting from war is of major relevance to treating this condition and preventing its degeneration into more complex forms (e.g., depression or PTSD). Longitudinal studies of war are relatively rare. Therefore, examining demoralization in the context of war with a longitudinal timeframe would allow an in-depth understanding of its impact. Therefore, the present prospective study examined the impact of exposure to war and demoralization symptoms after the war began on PTSS 6 months later. First, we examined whether exposure to war at Time 1 directly affected PTSS at Time 2. Second, we tested the moderating role of demoralization on the relationship between exposure to war and PTSS. We hypothesized that (1) exposure to war at Time 1 would be associated with higher demoralization (Time 1) and PTSS level (Time 2) and (2) demoralization would moderate the association between exposure to war and PTSS levels, with this association being the weakest among individuals with low levels of demoralization and the strongest among those with high levels.

2 | Method

2.1 | Participants and Procedure

The current longitudinal study was conducted at two time points (4 weeks and 6 months after the onset of the October 7 war). Of 393 people who participated at the first time point, 338 participated at the second time point (response rate: 86%). To ensure heterogeneous representation, the sample included various demographic groups regarding age, gender, ethnicity and income. We intentionally increased the representation of the Arab group, which constitute approximately 21% of Israel's population, to gain more insights and draw more precise conclusions about the subpopulations in Israel. This process, known as oversampling, is a common technique in statistical analysis to guarantee adequate representation of

subgroups, particularly small or underrepresented populations (Cochran 1977).

Respondents had to be aged 25 or older and have a sufficient understanding of Hebrew or Arabic to complete the survey. None of the participants reported major psychiatric events or cognitive decline in the 6 months prior to the outbreak of the war. The ethics review board of the affiliated university approved this study (No. 081/24).

Participants filled out questionnaires at Time 1, in the fourth week after the war broke out. Various steps were taken to reach the participants. First, initial filtering was performed based on area of residence and age through existing profiles from a survey company. Then, a research assistant contacted potential participants by email or text message with an invitation to participate. The message included a brief explanation of the study. Those interested in participating signed an online consent form, and a link to the questionnaire was sent to them (Sowan and Baziliansky 2024). Participants filled out questionnaires again 6 months after the war broke out (Time 2). Again, a research assistant contacted respondents who participated at Time 1 by email or text message with an invitation to participate in the second round. The message included a brief explanation of the study. Those interested in participating again signed an online consent form and received a link to the questionnaire. The survey duration ranged from 10 to 15 min. Respondents did not receive any incentive.

The demographic characteristics of the respondents are shown in Table 1. About 53% of the respondents were men; their age range was 25 to 70 years, with an average of 42.01 ($SD = 11.37$); about 52% were Jews, and 48% were Arabs; 60% were married or partnered; and 76% were employed. There was no difference in background variables between those who did or did not participate at Time 2.

2.2 | Measures

Background variables, an exposure to war index, and demoralization were assessed at Time 1 (4 weeks), whereas PTSS was measured at Time 2 (6 months). Background variables included gender, age, family status, education level, ethnicity, economic status, employment status and number of children.

The war exposure index was modified from prior research on the second Lebanon war (Cohen 2008; Yahav and Cohen 2007),

TABLE 1 | Background characteristics of the sample ($N=338$).

	<i>n (%) or M (SD)</i>	Range
Age, years	42.01 (11.37)	25–70
Gender		
Male	179 (53.0)	
Female	159 (47.0)	
Ethnicity		
Jewish	175 (51.7)	
Arab	163 (48.3)	
Education, years	14.02 (3.23)	0–25
Marital status		
Married or partnered	202 (59.7)	
Nonmarried	136 (40.3)	
Employment		
Full time	194 (57.3)	
Part-time	66 (19.5)	
Retired	12 (3.5)	
None	66 (19.5)	
Income		
Above average	135 (39.9)	
Average	61 (18.0)	
Below average	142 (42.1)	

which assessed respondents' exposure to war events. The index features eight items: acquaintances or relatives who have been injured, killed or kidnapped; subjective feelings of danger; property or home damage; employment or income damage; and intensity of watching TV coverage (including live news, extensive reports on the war and casualties, and discussions and analysis by experts). Each item other than the first was measured on a 4-point Likert scale (0 = *not at all* and 3 = *very much*). We created a new dichotomous variable by recoding (0 = 0 or 1 and means lower intensity, whereas 1 = 2 or 3 means higher intensity). An example question is 'Has your income or employment been negatively affected since the war broke out?' Only the first question related to acquaintances or relatives who were harmed, and respondents were asked to report 'yes' or 'no'. Based on the sum of responses (Bromet et al. 2016), a total score was produced that ranged from 0 to 8; higher scores indicate higher intensity of exposure to war.

The Acute Stress Disorder Interview (Bryant and Harvey 2000) is a structured interview based on DSM-5 criteria (American Psychiatric Association 2013) that relate to dissociative symptoms (five items), reexperiencing (six items), avoidance (four items) and arousal (six items). Respondents were asked to report the extent of symptoms they experienced during the last week (e.g., 'Intrusive memories about information and reports

related to the outbreak'). The responses were rated from 1 (*not at all*) to 5 (*very much*). Scores ranged from 19 to 95, with higher scores indicating higher levels of acute stress symptoms. Earlier studies have shown that the measure has high sensitivity (91%) and specificity (93%) and acceptable internal consistency (Cronbach's $\alpha=0.86$ – 0.94 ; Bryant and Harvey 2000; Ye et al. 2020). The questionnaire was translated from English into Hebrew and Arabic (Yahav and Cohen 2007). The internal consistency in the present study was $\alpha=0.94$.

Demoralization was measured by the Demoralization Scale II. This is the short version of the Demoralization Scale-24—the most widely validated scoring instrument used for assessing demoralization among patients with chronic health conditions (Robinson et al. 2016). The measure is a 3-point self-report scale, ranging from 0 (*never*) to 2 (*often*), that features 16 items and two subscales (meaning and purpose, distress and coping ability). Given its revalidation, psychometric strengthening and simplification, the short version is an improved and more practical measure of demoralization for research and clinical use (Robinson et al. 2016). Example statements are 'I do not cope well with life' and 'I feel that I cannot help myself'. To determine clinically significant levels of demoralization, we adopted Bobevski et al.'s (2022) cutoff of 10 demoralization symptoms. This scale has been used in previous studies and was shown to be reliable ($\alpha=0.86$ – 0.92 ; Liao et al. 2017; Wu, Tung, and Wei 2019). The questionnaire was translated into Hebrew and Arabic, and its internal reliability coefficients in a previous study were acceptable (Sowan and Kissane 2024). The internal consistency in the present study (Cronbach's alpha) was $\alpha=0.93$.

PTSS was evaluated using the Hebrew version of the PTSD Checklist-5, which was translated by the National Center for PTSD. This 20-item questionnaire was developed to assess and screen for PTSS based on the DSM-5 criteria relative to the past month, with a score range of 0–80 (Weathers et al. 2014). Each item is measured on a 5-point Likert scale (0 = *not at all* to 4 = *extremely*). Higher scores indicate higher severity of PTSS. In keeping with previous research (Murphy et al. 2017), a cutoff score of 34 was used to indicate probable PTSD. The excellent psychometric properties of the checklist are well established (Blevins et al. 2015; Wortmann et al. 2016). Internal consistency of the measure was very high in the current sample ($\alpha=0.96$).

2.3 | Data Analysis

Descriptive statistics were calculated for background and study variables, including frequencies, percentages, means and standard deviations. Analyses included chi-square tests, *t* tests for continuous variables and Pearson correlations between all variables. The first step involved skewness and kurtosis analysis to determine the normality of the study variable distribution; these values fell between -0.5 and 0.5 , considered to reflect approximately symmetric distribution (Bulmer 1979; Newbold, Carlson, and Thorne 2013). Next, effect sizes and statistical significance were assessed via a bootstrapping test (5000 bootstrap samples using PROCESS Model 1); continuous variables were used in the moderation analysis. This model featured interaction terms, and predictor and moderator variables were standardized to reduce

multicollinearity (Aiken and West 1991). Acute stress symptoms were entered as a covariate variable; it was the only variable associated with the outcomes.

Finally, we used the Johnson–Neyman technique, generating comprehensive information regarding how the range of the moderator influences a predictor's effect on an outcome variable. This approach uses a regression line, with the predictor's effect on the outcome regressed on the moderator to determine effect changes based on moderator changes, along with 95% confidence bands on the regression line (Hayes 2017).

We performed this analysis to determine how the effect of exposure to war on PTSS varies from significant to nonsignificant based on demoralization values.¹ This method involves calculating the independent variable's conditional effect on the dependent variable at three moderator value—low (16th percentile), middle (50th percentiles) and high (84th percentile)—with 5000 samples bootstrapping. All analyses were run using PROCESS in SPSS 27.0 (Hayes 2012, 2017).

3 | Results

Descriptive statistics of the study variables are presented in Table 2. The mean score for PTSS was moderate ($M=16.12$, $SD=12.80$). The mean score for demoralization was also moderate ($M=9.83$, $SD=1.60$). In this sample, 17.4% ($n=58$) of respondents met the criteria for PTSD based on the cutoff of 34 (Murphy et al. 2017). Table 2 also shows the correlations among the study

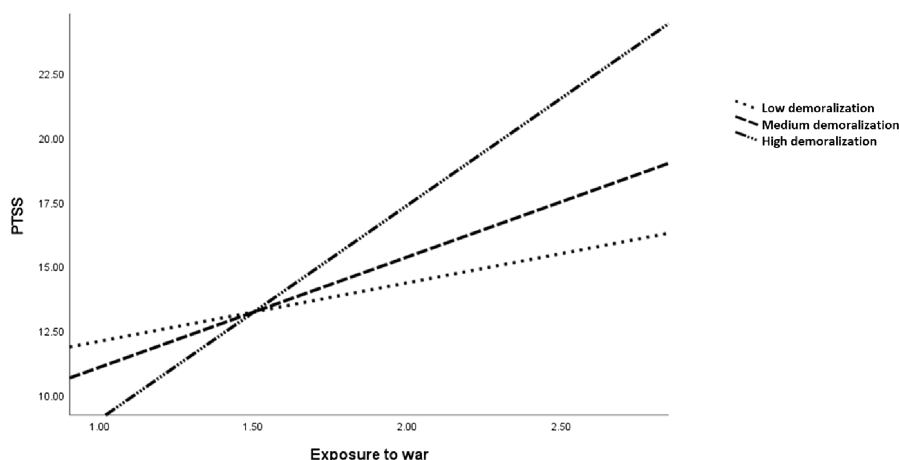
variables. In accord with the first hypothesis, exposure to war at Time 1 was positively associated with both demoralization (Time 1) and PTSS (Time 2). The higher the degree of war exposure at Time 1, the higher the level of demoralization symptoms and PTSS. To examine the second hypothesis, which postulated that demoralization at Time 1 would moderate the relationship between exposure to war at Time 1 and PTSS at Time 2, PROCESS Model 1 was performed (see Figure 1). This model controlled for acute stress symptoms at Time 1. In accordance with the second hypothesis, the results showed a significant moderating impact of demoralization on the relationship between exposure to war and PTSS ($b=0.84$, $t=1.748$, $p\leq 0.01$). The overall model, including the dependent and interaction variables, was statistically significant, $F(5, 335)=16.07$, $p<0.001$; 19.34% of the variance in PTSS was explained by the independent and interaction variables. The interaction added 3% to the explained variance of PTSS, $\Delta R^2=0.03$, $F(1, 335)=6.003$, $p=0.005$. The results of the Johnson–Neyman analysis showed that the negative impact of demoralization on PTSS became significant when the demoralization score was greater than 5.

The graphic representation of the analysis (Figure 1) shows that the slope between exposure to war and PTSS was steeper at higher levels of demoralization, compared to moderate and lower levels. The slope of the association between demoralization and PTSS was not statistically significant at the low point ($b=2.267$, $SE=1.84$, $p=0.23$), as shown in Table 3, which means that exposure to war was not significantly associated with PTSS at low levels of demoralization. However, with moderate ($b=4.279$, $SE=1.33$, $p<0.001$) and high ($b=8.304$, $SE=1.88$,

TABLE 2 | Means, standard deviations, range, and correlations of the study variables ($N=338$).

	<i>M</i>	<i>SD</i>	Theoretical range	Actual range	1	2
1. PTSS	16.12	12.8	0–80	0–48		
2. Demoralization	9.83	1.6	0–32	0–32	0.18*	
3. Exposure to war	2.01	0.54	1–4	1.00–3.33	0.25*	0.34*

* $p<0.001$.



Note. PTSS, posttraumatic disorder.

FIGURE 1 | Results of the moderation model of demoralization on the impact of war exposure on PTSS. Note: PTSS, posttraumatic disorder.

TABLE 3 | Conditional effects of exposure to war on PTSS.

Moderator	Condition	<i>B</i>	SE	Bootstrap 95% CI	<i>p</i>
1. Exposure to war ^a					
2a. Demoralization (16th percentiles) ^b	Low	2.2672	1.84	−1.36, 5.89	0.22
2b. Demoralization (50th percentiles)	Middle	4.2797	1.33	1.65, 5.90	0.00
2c. Demoralization (84th percentiles)	High	8.3046	1.88	6.59, 14.01	0.00
3. Exposure to war*Demoralization ^c		0.5607	0.18	0.425, 0.762	0.047
5. ASS ^d		0.0974	0.41	0.017, 0.177	0.02

^aThe predictor.^bThe conditional effect of the independent variable on the dependent variable regarding three values of the moderator (low [16th percentiles], middle [50th percentiles] and high [84th percentiles]).^cThe interaction.^dThe covariate.

$p < 0.001$) levels of demoralization, the slope for demoralization was positive and significant. The line was much steeper for high levels of demoralization, which means that the impact of demoralization on PTSS was much stronger when demoralization was high compared to moderate. As shown in Figure 1, as the demoralization level increased, the strength of the relationship between exposure to war and PTSS also increased. Thus, the second hypothesis was supported.

4 | Discussion

The present study contributed to the existing literature concerning predictors of long-term PTSS, providing insight into the impact of exposure to war and demoralization on PTSS. Demoralization symptoms and its impact on PTSS had not been previously examined in the context of war exposure. The study revealed that higher exposure to war was associated with higher levels of demoralization symptoms and PTSS. Moreover, the impact of war exposure on PTSS was contingent on demoralization levels; only at moderate and high levels of demoralization symptoms did exposure to war significantly affect PTSS.

In accordance with previous research, war exposure at Time 1 affected PTSS at Time 2 (Boehm-Tabib 2016; Geoffrion et al. 2022). The impact, however, was relatively small, which may be explained by the fact that ongoing trauma exposure, especially exposure to high-impact threats to life in an ongoing war, may act in two directions. For some people, exposure may build resistance against mental health problems (Başoğlu et al. 1994) via ‘immunization’ to trauma-induced fear or increased self-efficacy or controllability in the face of direct challenges. Alternatively, chronic exposure to trauma may produce a strong sense of vulnerability (Besser and Neria 2012). The present study expanded and deepened our knowledge regarding PTSS in response to warfare.

A further finding is that the levels of demoralization determined the extent to which exposure to war affected PTSS. To clarify, exposure to war had no statistically significant effect on PTSS for individuals with low levels of demoralization; this impact was significant only among individuals with moderate and high levels of demoralization symptoms. This suggests that individuals with moderate or high levels of demoralization have higher risk of

developing PTSD. This finding is in accord with previous findings that increased demoralization was significantly associated with PTSD 2 months and 2 years after a disaster (Kohn 2013; Neria, Nandi, and Galea 2008). The findings suggest that the response to a traumatic event is often a process that begins immediately after exposure and through helplessness and fearfulness, which may lead to feeling trapped and vulnerable (Bobevski et al. 2022). This can lead to demoralization in the short term and increases the possibility of developing PTSD in the long term. This finding is of high significance, especially in the context of war, given the lack of prior studies regarding the relationship between demoralization and PTSS (Briggs 2011). Previous studies that tested relationships between demoralization and PTSS among patients coping with life-threatening conditions (e.g., cardiac disease and cancer) found significantly lower quality of life, high levels of somatization symptoms and poorer psychosocial functioning (Rzeszut and Assael 2021; Tecuta et al. 2015).

This study found demoralization that occurs shortly after the outbreak of war could be a good predictor for PTSD. Demoralization remained statistically significant despite controlling for acute stress symptom severity and background variables. This indicates that a short measure of demoralization might be valuable to identify individuals with increased risk of PTSD in clinical settings. The primary strategy to counteract demoralization is to restore morale. Clinicians should address psychosocial stressors suspected to be causing demoralization, possibly through discussions that promote interpersonal functioning and validate emotional difficulties (Angelino and Treisman 2001; Sowen, Kochli-Hailovski, and Cohen 2023). Alongside efforts to address underlying stressors, care providers should offer strategies to bolster hope and meaning (Griffith and Gaby 2005).

The limitations of this study should be underscored. First, the study used self-reported questionnaires, which may be biased by personal factors. Second, although the age range was wide, the sample was skewed towards a younger population. Third, due to the unique characteristics of the present war in Israel, the generalizability of the results to other countries is limited.

In addition, the findings of this study may be subject to several biases. First, although we included various demographic

groups, considering age, gender, ethnicity and income, to ensure heterogeneity, we intentionally increased the representation of the Arab group. Our sample included 48% Arab participants, whereas their representation in Israel's population is approximately 21%, to gain more insights regarding this group. Second, recall bias may have occurred, because participants might have had difficulty accurately remembering or articulating their experiences and symptoms. Furthermore, response bias could have occurred if participants provided socially desirable answers rather than truthful responses, especially regarding sensitive topics like psychological distress. Finally, the study sample did not include individuals with scores approaching the upper limit of the range and variability of scores on the PTSS measurement. Therefore, the study may have failed to account for individuals experiencing very high levels of PTSS.

Despite these limitations, the present study extends previous knowledge regarding the impact of war stress and the potential role of demoralization in moderating the negative effect of exposure to war on a broad range of psychiatric symptomatology over time (e.g., PTSD). Early psychosocial interventions to help highly demoralized people may be useful for alleviating the long-term psychological repercussions of exposure to war-related stress. Future studies should examine other risk factors that may increase PTSS during wartime. Future studies that follow changes in levels of PTSS for longer periods may contribute additional information on PTSS trajectories in reaction to war. Future research on the longitudinal outcomes of disasters should consider implementing a measure of demoralization to elucidate further its predictive utility regarding PTSD and other postdisaster psychopathology.

Author Contributions

All authors contributed to the study conception and design. Material preparation and analysis were performed by all authors (equal contribution).

Ethics Statement

Approval was obtained from University of Haifa Committee for Ethical Research with Humans (Permit No. 081/24).

Consent

Informed consent was obtained from all individual participants included in the study. In addition, all methods were performed in accordance with University of Haifa Committee for Ethical Research with Humans guidelines and regulations.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy and ethical restrictions.

Endnotes

¹ The values of demoralization range on a continuum between 0 and 32. However, the cutoff point for the diagnosis of demoralization is 10.

Therefore, our reference point in determining low, medium and high demoralization levels is 10 and not 32.

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