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RESEARCH ARTICLE

Trauma history predicts depression and posttraumatic stress symptoms better than a psychiatric diagnosis: Comparing wartime, routine time, and early COVID-19 in Israel

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Abstract

Individuals with a psychiatric diagnosis and those with a history of trauma are at high risk for depression and posttraumatic stress symptoms (PTSS) following exposure to new traumatic events. Nevertheless, research is scarce on how having both a psychiatric diagnosis and a trauma history affect reactions to new traumatic events, and how different trauma types may affect individuals with a psychiatric diagnosis. We thus examined whether different stressful contexts (War and COVID-19) affected individuals with and without a psychiatric diagnosis differentially and whether results might be explained by prior trauma exposure. In the same cohort, we assessed depression and PTSS during wartime (2014), routine time (2016), and during the COVID-19 pandemic (2020) in a sample with (n = 89) and without (n = 104) a self-reported psychiatric diagnosis. This cohort was recruited during the 2014 Israel-Gaza War using social media, snowballing and outreach to mental health rehabilitation centres. We used a linear mixed modelling approach on data from the entire sample, as well as on the two study groups separately. We found that trauma history predicted PTSS and depression whereas a history of psychiatric diagnosis did not. Regarding trauma types, we found that individuals in the psychiatric diagnosis group relative to themselves had more symptoms during COVID-19 compared to war and routine time, while those without diagnosis had more PTSS and depression symptoms during wartime compared to routine time and COVID-19. In conclusion, a traumatic past may have an important influence on reactions to different types of traumatic events. Distinct traumatic events may affect individuals with or without a psychiatric diagnosis differentially.

KEYWORDS
COVID-19, depression, mental health disorder, posttraumatic stress, trauma, war

1 | INTRODUCTION

Two particularly important risk factors in predicting PTSS and depression are having a psychiatric diagnosis and a history of trauma. Indeed having a psychiatric diagnosis has been observed to be strongly related to the development of PTSS and depression symptoms following exposure to subsequent traumatic events (Gelkopf et al., 2017; Mauritz et al., 2013; Mueser et al., 1998, 2002). In parallel, studies have shown trauma exposure to be a major risk factor for the development PTSD and depression (Copeland et al., 2018; Mueser et al., 1998). In line with this finding, trauma history is one of the most significant factors in predicting the development of PTSS and depression after exposure to a new traumatic event (Brewin et al., 2000; Ozer et al., 2003). Additionally, it has also been observed that having any mental disorder puts individuals at risk of experiencing traumatic events (Kessler, Berglund, et al., 2005; Kessler, Chiu, et al., 2005; Mueser et al., 2001; Neria et al., 2002), as well as suffering serious psychiatric symptomatology, including PTSS and depression following a stressful encounter (Grubaugh et al., 2011).

The literature is thus replete with very rich and unequivocal empirical data suggesting that a majority of individuals with a psychiatric diagnosis have experienced major traumatic events (Copeland et al., 2018), far more than the general population (Mauritz et al., 2013). Furthermore, as suggested in a major review of the impact of September 11 on psychiatric patients, new traumatic experiences impact individuals with a psychiatric diagnosis more severely than individuals without (Franz et al., 2009). Moreover, susceptibility to develop PTSS (Grubaugh et al., 2011; Hardy & Mueser, 2017; Mauritz et al., 2013) and depression (Eckart et al., 2004) subsequent to a traumatic incident is also much higher in psychiatric populations than in the general population. Therefore, ample empirical evidence suggests that trauma and having a psychiatric diagnosis are strongly overlapping factors both predicting PTSS and depression in reaction to subsequent traumas.

On a theoretical level, the diathesis–stress approach suggests that a predisposition to a mental disorder combined with stressful conditions may play a precipitating or facilitating role in the development of further mental health problems. This approach also suggests that new stressors or traumatic events can contribute to additional mental health issues in those with previous traumatic exposure and who developed similar problems in the past (Ingram & Luxton, 2005).

In addition, not all traumas are created equal. Studies have suggested that distinct trauma types, for example, interpersonal trauma, sexual abuse, and natural or man-made disasters, could affect the development of mental health problems differentially (Hyland et al., 2017; McMillan & Asmundson, 2016; Wanklyn et al., 2016). Furthermore these trauma types may affect individuals differentially depending upon available psychological, social and familial resources, and individuals living with a psychiatric disorder may have both different and weakened resources. Indeed, armed conflicts and disease epidemics are very dissimilar events, with potentially different implications for the general population and for individuals with a psychiatric diagnosis.

Data regarding the susceptibility of individuals with severe mental health problems in wartime are relatively scarce and inconsistent. During the first Gulf War several Israeli studies suggested that adverse reactions for psychiatric patients were negligible (Bendor et al., 1993, 1994; Gelkopf et al., 1995; Melamed et al., 1996; Sternik et al., 1999). However, Strous et al. (2004) found that psychiatric inpatients experienced more anxiety than staff, as well as compared to 2 months before the war. In a study on of the 1991–1995 Balkan war, Croatian civilians with a psychiatric diagnosis suffered from higher levels of psychopathological distress than matched German individuals with a psychiatric diagnosis who were not exposed to war (Jovanovic et al., 2010). In an experience sampling methodology study of the same cohort as in the current study, during the 2014 Israel–Gaza war, participants with a psychiatric diagnosis had higher levels of three out of four PTSD symptom clusters, including negative cognitions (Gelkopf et al., 2017), but similar emotional and threat reactivity to rocket warning sirens compared to participants without a psychiatric diagnosis (Gelkopf et al., 2017; Lapid Pickman et al., 2021). Regarding service use and help seeking, one large study observed no change and even a reduction in psychiatric outpatient visits and hospitalizations during the 2000–2002 Intifada in Jerusalem (Levav, 2006). Another study found less help seeking by individuals with a diagnosis of psychiatric disorder from a central trauma centre in Israel compared to those without during two of the Israel–Gaza wars (Halperin et al., 2017).

Regarding the combined impact of previous maltreatment and war, a study of parents and adolescents in northern Uganda (Olema et al., 2014) suggested that child abuse alone accounted for the level of posttraumatic pathology in war-exposed adults, while depression in parents and adolescents was predicted by both child maltreatment and level of war exposure. These results may imply the possibility that the effect of conflict, such as war, is exacerbated by the impact of past traumatic experiences. Furthermore, it is possible that a history of psychiatric diagnosis *and* previous traumatisation are highly concomitant phenomena. It would be helpful to differentiate their impact on mental health, which can be significant, especially following exposure to new potentially traumatic events in the present.

Regarding the COVID-19 pandemic, many researchers (see, for example, Druss, 2020; Kozloff et al., 2020; Sheridan Rains et al., 2021; Zhand & Joober, 2021) warned of the potential danger to this vulnerable population. Indeed, individuals with severe mental health problems tend to have fewer material and social resources (Cohen, 1993) and more COVID-related health risk factors (Firth et al., 2019) and may be more susceptible to stress in general (Zubin & Spring 1977) and possibly to COVID-related stress than the general population. The majority of cross-sectional studies that empirically investigated levels of distress in people with psychiatric diagnoses arrived at the common conclusion that they were vulnerable to COVID-19-related distress (Czaplicki et al., 2022; Hao et al., 2020; Iasevoli et al., 2021; Tang et al., 2020; Van Rheenen et al., 2020; Vissink et al., 2021). However, the aforementioned

studies either lacked a longitudinal perspective, healthy controls or did not include a history of trauma as a potentially confounding factor. Thus, the question remains unanswered as to whether individuals with a psychiatric past—who tend to be symptomatic in routine times—are also more reactive to the pandemic than those without. It is also unclear whether this is due to a prior trauma exposure, which is highly prevalent in individuals diagnosed with a psychiatric illness.

Nevertheless, at least one large-scale longitudinal matched study (pre- and during COVID-19) of different cohorts (Pan et al., 2021) suggested that although individuals with a psychiatric diagnosis ($n = 1181$) had elevated levels of depressive symptoms, anxiety, and loneliness, they did not report a greater increase in those symptoms during COVID-19 than the general population ($n = 336$). Moreover, they also observed a decrease in depressive symptoms during the pandemic among those with the greatest chronicity and mental health disorder burden. Relatedly, Lahav (2020), found, in a general population sample, that a prior history of exposure to trauma predicted anxiety, depression, and symptomatic reactivity during the pandemic.

In conclusion, cross-sectional and clinical studies have been inconsistent regarding whether individuals with a psychiatric diagnosis have greater trauma-related reactivity to both wars and pandemics compared with individuals without a prior psychiatric diagnosis. Research indicates that while they have more baseline symptomatology than the general population, they are not actually more reactive to these specific stressful contexts. In addition, studies suggested that a history of trauma, which is highly prevalent in individuals with a psychiatric diagnosis, might be a central factor that increases this population's vulnerability during exposure.

In the current study, we asked two central research questions: (1) Do individuals with a psychiatric diagnosis react differentially to major environmental stressors, such as a war and a pandemic, compared to individuals without a psychiatric diagnosis, and might a potential difference be explained by prior trauma exposure? (2) Could war and COVID-19 reactivity be differentiated from routine time for both populations?

2 | METHODS

The current study was part of a larger study aimed at observing the development of psychiatric symptoms during exposure to different traumatic events. The assessments included both intensive daily assessments for 30 days at each wave and standardized traditional questionnaires at the onset of each wave. Only the traditional questionnaires were used in the current study.

2.1 | Recruitment and participants

The sample was obtained for the first study wave during the Israel-Gaza war in July 2014 and remained our basic cohort for future recruitment in the subsequent waves. Our original sample comprised 214 civilians residing in the south or central regions of Israel, who were living in regions exposed to rocket fire. Participants entered the study gradually, over a 4-week period that began the eighth day of war. The general population sample was recruited via reaching out to colleges, universities and local communities (villages, kibbutzim, towns) in the southern and central districts (the major areas under rocket fire) by advertisement in social media and snowballing methods. The psychiatric population sample was recruited through the Ministry of Health psychiatric vocational, housing and social services rehabilitation services noticeboards in the same districts, as well as through social networks, Internet sites and billboards affiliated to rehabilitation settings as well as snowballing. Participants directly contacted the research team, and recruitment and consent procedures were conducted by telephone.

Informed consent (as well as the request to be re-contacted in a future wave) was requested for all participants at each wave. Participants were 18 or older at the time of the first wave. We recruited at baseline 114 (53.3%) individuals from the general population and 100 (46.7%) with a pre-war psychiatric diagnosis. Of those, 210 participants (98.1%) fully completed the first wave baseline questionnaire that contained demographic questions. These were then followed by posttraumatic stress symptoms (PTSS) and depression (182 participants [86.4% inclusion rate]) assessments. The same cohort was reassessed in March 2016 during a routine period of no war or pandemic (137 participants [64.0% inclusion rate]), and in May 2020 following the first wave of the COVID-19 pandemic (149 participants [69.6% inclusion rate]).

Included in the current study were all participants who completed the baseline demographic questionnaire in addition to at least one out of three PTSS and depression questionnaires administered during the three waves. In total, the current sample comprised 193 individuals (90.19% inclusion rate), 104 of them from the general population (53.8%) and 89 (46.2%) with a psychiatric diagnosis of mental disorder.

2.2 | The different waves and their timing

The first assessment wave was conducted in July–August during the 2014 Israel–Gaza war (see for example Gelkopf et al., 2019; Greene et al., 2020; Lapid Pickman et al., 2021). All participants were present in Israel and exposed to the war, when more than 4500 rockets and mortar shells were fired from Gaza on Israeli communities, and Israel conducted air and ground operations in Gaza. The second wave was in March 2016 during a routine peaceful period. The third wave was carried out in May 2020. By end of data collection in May 2020, 23,109 people in Israel had been infected with COVID-19, 15,432 had recovered, and 321 had died (State of Israel Ministry of Health, n.d.). In March 2020, Israel had enforced social distancing rules, restricted group gatherings, declared a national state of emergency, and introduced a very restrictive lockdown (COVID-19 pandemic in Israel, 2021).

2.3 | Questionnaire administration

During all three waves, participants were sent questionnaires via a personalised email link and were remunerated $120 for each wave (which also included a period of intensive daily data collection). The ethics committee of the University of Haifa approved the studies.

The demographic distribution of the final sample is presented in Table 1. Individuals with a psychiatric diagnosis were older, more often single and childless, and had less education and employment and lower economic status. They also had more exposure to different trauma types.

3 | MEASURES

Demographics included gender, age, country of birth, marital status, religion (Jewish, Muslim, Christian, other), self-defined religiosity (Secular, traditional, religious), education, employment (full time, part time, temporary, student, unemployed, other) and financial status (below average, about average, above average). We also queried whether the individual had tested positive for COVID-19.

Having a psychiatric diagnosis information was obtained on the participants' own declaration of having a prior severe mental health disorder diagnosis. In addition, we queried last medically received psychiatric diagnosis, previous hospitalizations, use of psychiatric medication and use of rehabilitation services to validate the original classification. No inconsistencies were found on these parameters (see Gelkopf et al., 2019).

History of traumatic events. We used the Trauma History Screen (Carlson et al., 2011), a brief self-report measure that assesses previous exposure to 13 types of high magnitude stressors. Participants indicated whether or not they had experienced each item (yes or no). We present the type, mean, and sum number of events experienced in Table 1. For the analyses we used the sum score. The questionnaire possesses sound psychometric properties; its temporal stability was fair-to-good, with median kappa coefficients of agreement ranging from 0.61 to 0.77 (Carlson et al., 2011).

Depression symptoms were measured by the Patient Health Questionnaire (PHQ-9; Kroenke et al., 2001), a widely-used 9-item questionnaire which assesses DSM-5 depression symptoms. In this survey, participants were asked how often they had experienced symptoms over the past month. Items were rated on a Likert scale ranging from 0 (not at all) to 3 (almost every day). Total scores ranged from 0 to 27. The internal reliability for the three waves ranged from 0.89 to 0.93.

Posttraumatic stress symptoms were assessed using the PTSD checklist for DSM-5 (PCL-5; Weathers et al., 2013); that assesses the 20 PTSD symptoms outlined in the *Diagnostic and Statistical Manual for Mental Disorders* (*DSM-5*) over the past 30 days. To permit comparison with intensive daily assessment data of the larger study, the scale was modified from a 5-point scale to a 4-point Likert scale ranging from 0 (not at all) to 3 (very much). Internal reliability ranged from 0.94 to 0.96 for the three waves.

3.1 | Data analysis

We aimed to compare the levels of depression and posttraumatic symptom severity across the conditions (wartime, routine time, COVID-19) and between groups (psychiatric diagnosis vs. no psychiatric diagnosis), subject to controlling for possible confounding effects of gender, age, education, income, and traumatic history. These have all been observed empirically to be major factors affecting reactions to traumatic exposure (Ozer et al., 2003). First, we performed simple univariate analyses on all the demographics for the purpose of presenting our samples and the differences between individuals with and without a psychiatric diagnosis.

To assess differences and similarities, we applied a linear mixed modelling (LMM; SPSS V.25.0) approach, which allows for the integration of within-and-between-participant sources of variation (Heck et al., 2013). In mixed models, effects vary across subjects as opposed to fixed effects. In each LMM, we first analysed the partial models that included only the differences between conditions and the difference between groups. Thereafter, the full model was obtained after entering the covariates (gender, age, education, income, and traumatic history). We then repeated these analyses within the psychiatric diagnosis and the non-psychiatric diagnosis groups separately. The likelihood-based approach (Full Information Maximum Likelihood; Schminkey et al., 2016) allowed us to incorporate all information for those participants who responded to any of the three waves even if information was missing for some of the waves.

Depression and PTSS scores at waves 1, 2, and 3 were missing for 13.7%, 35.1%, and 29.4% respectively. Therefore, we tested for missing at random as a preliminary requirement to justify our decision criterion and received Chi-Square = 15.66, df = 12, $p = 0.207$; using Little's Missing Completely at Random test (Little, 1988), the missing at random hypothesis was not rejected. There were no missing values *within* the waves as all questionnaire questions were required.

As we present the result of the *separate* analyses of both those with and without a psychiatric diagnosis groups for depression and PTSS in Tables 2–5, we also present the mixed models and mean rankings of both groups *together* for depression and PTSS in Appendices A, B, C, and D.

4 | RESULTS

We first present the mixed model results for depression and PTSS for both the psychiatric diagnosis and the no psychiatric diagnosis group together (tables are presented in the supplementary analyses) followed by a separate analysis of both groups presented thereunder.

4.1 | Depression

Appendix A presents the mixed model results for depression. The intraclass correlation coefficient (ICC) was 0.52, indicating that

TABLE 1 Demographic characteristics, clinical status, and trauma history ($n = 193$) of participants with and without a history of diagnosis of mental disorder (DMD).

		Has No psychiatric diagnosis ($n = 104$)		Has a psychiatric diagnosis ($n = 89$)		
	Categories	***N* (*M*)**	**% (SD)**	***N* (*M*)**	**% (SD)**	***t*/χ2/Fisher**
Gender	Female	71	68.3	52	58.4	2.01
	Male	33	31.7	37	41.6	
Age		(29.83)	(9.01)	(36.62)	(9.98)	−4.97***
Country of birth	Israel	89	85.6	73	82.0	0.45
	Outside of Israel	15	14.4	16	18.0	
Marital status	Single	32	30.8	45	50.6	23.57***
	Partnered	29	27.9	20	22.5	
	Married	41	39.4	13	14.6	
	Divorced/separated	2	1.9	11	12.3	
	Children	42	40.4	23	25.8	4.54*
Religion	Jewish	102	98.1	84	94.4	3.02
	Christian/Muslim, other	2	1.9	5	5.6	
Self-defined religiosity	Secular	62	59.6	62	69.7	3.28
	Traditional	24	23.1	19	21.3	
	Religious	18	17.3	8	9.0	
Education	Primary education only	0	0	1	1.1	7.33*
	High school (with/without diploma)	45	43.3	54	60.7	
	Higher education (academic and certificate)	59	56.7	34	38.2	
	Years of education	(14.12)	(2.63)	(13.59)	(2.35)	1.46
Employment	Full-time	35	33.6	12	13.5	37.62***
	Part-time	14	13.5	23	25.8	
	Temporary jobs	12	11.5	9	10.1	
	Student	24	23.1	4	4.5	
	Unemployed	5	4.8	20	22.5	
	Other	14	13.5	21	23.6	
Economic status	Below average	38	36.5	56	62.9	13.45**
	About average	48	46.1	25	28.1	
	Above average	18	17.4	8	9.0	
COVID-19 Status	Did not have COVID-19	84	100.0	65	100.0	No analysis
	Had COVID-19	0	0	0	0	
Main psychiatric[a] diagnosis	Schizophrenia and Psychotic disorders			30	33.7	
	Affective disorders			29	32.5	
	Personality disorders			8	9.0	
	Anxiety disorders			7	7.9	
	PTSD			3	3.4	
	Don't know/refused to reply			12	13.5	

(Continues)

TABLE 1 (Continued)

		Has No psychiatric diagnosis (n = 104)		Has a psychiatric diagnosis (n = 89)		
	Categories	N (M)	% (SD)	N (M)	% (SD)	t/χ2/Fisher
Trauma history	Severe accident	20	19.2	35	39.3	9.50**
	Natural disaster	0	0.0	8	9.0	9.75**
	Child physical assault	11	10.6	35	39.3	21.84***
	Adult physical assault	3	2.9	25	28.1	24.56***
	Child sexual assault	8	7.7	24	27.0	12.88***
	Adult sexual assault	4	3.8	19	21.3	13.99***
	Weapon assault	4	3.8	15	16.9	9.14**
	Military service trauma	24	23.1	21	23.6	0.01
	Sudden death of relative/friend	54	51.9	58	65.2	3.45
	Witnessing death or serious injury	13	12.5	23	25.8	5.63*
	Loss of property	10	9.6	26	29.2	12.14***
	Sudden abandonment	15	14.4	35	39.3	15.49***
	Other	43	41.3	60	67.4	13.10***
	Total trauma events	(2.01)	(1.44)	(4.31)	(2.89)	−6.82***
	No traumatic events	17	15.0	7	7.2	
	1 event	33	29.2	8	8.2	
	2 events	23	20.4	14	14.4	
	3 events	23	20.4	8	8.2	
	4 events	12	10.6	22	22.7	
	5–13 events	5	1.4	38	39.2	56.23***

[a]All data in the current table refer to the entire sample (N = 193), except for main psychiatric diagnosis, which refers to the psychiatric diagnosis group only (n = 89), and COVID-19 status which refers to the participants enroled in May 2020 following the first wave of the COVID-19 pandemic (n = 149). ***$p < 0.001$ **$p < 0.01$ *$p < 0.05$.

between-person and within-person sources of variance were roughly the same. The model included the group effects (with vs. without a psychiatric diagnosis). In the partial model (without gender, age, education, income, and traumatic history), individuals with a psychiatric disorder had higher depression scores. In the full model, however, this main effect was not present when other variables were entered. Only trauma history predicted the depression levels (b = 1.15, $p < 0.001$), suggesting that trauma history and psychiatric status could be highly related. Thus, group affiliation (psychiatric diagnosis vs. no psychiatric diagnosis) was not found to be associated with depression levels when taking trauma history into account.

In addition, we found that during wartime and COVID-19, assessments for the entire sample did not significantly differ one from another, while for routine time, depression levels were lower compared to assessments taken during COVID-19 (b = −2.17, $p < 0.001$), but not in comparison to wartime. The counter-intuitive non-significant group effect (psychiatric diagnosis vs. no psychiatric diagnosis) was explained by the interaction ($F(2,457)$ = 5.88, $p < 0.01$), suggesting that during crisis times (i.e., war/pandemic), individuals with and without a psychiatric diagnosis experienced similar depression levels on average, while depression levels during non-crisis times among the no-psychiatric diagnosis group were lower than in the group with a psychiatric diagnosis.

Appendix B presents marginal mean ranking for depression for the three time-periods. Specifically, in the group without a psychiatric diagnosis, the war assessment of depression ("b") was significantly higher than during routine time ("a") and the COVID-19 assessment ("ab") did not differ from either wartime or the routine time'd-period. In the psychiatric diagnosis group, the three depression assessments ("a") did not differ from one another. These results also suggest that the different assessment periods affected those with and without a psychiatric diagnosis differentially ($F(2,457)$ = 3.24, p = 0.040).

4.2 | Posttraumatic stress symptoms

Appendix C presents the mixed model results for PTSS. As before, a modelling approach similar to that used with depression was applied to the PTSS outcomes. The intraclass correlation coefficient (ICC) was 0.63. In the partial model, the group (psychiatric diagnosis vs. no-psychiatric diagnosis) main effect was found to be significant (b = −7.52, $p < 0.001$). Individuals with a psychiatric diagnosis

experienced significantly higher PTSS levels on average. In the partial model, the PTSS levels across the three time points (wartime–routine time–COVID-19) also differed one from another. However, (as in the depression analysis) these main effects were not present when demographics and trauma history were entered in the full model. In the final full model for the entire population, only trauma history affected the PTSS levels ($b = 2.59$, $p < 0.001$).

Furthermore, participants reported PTSS symptoms to be higher during the COVID-19 period compared to routine time. By breaking up the follow-up index × group interaction (see Appendix D for marginal mean ranking), we found that PTSS levels among participants without a psychiatric diagnosis were significantly higher during wartime ("b") than during routine time ("a"). The COVID-19 PTSS measurement did not differ significantly from either of them ("ab"). In contrast, the PTSS assessments remained, on average, undifferentiated over the three time-periods for the psychiatric diagnosis group ("a"). These results also suggest that the different periods affected those with and without a psychiatric diagnosis differentially ($F(2,457) = 3.24$, $p = .040$).

4.3 | Analysis of depression and posttraumatic symptoms for the psychiatric diagnosis and the No-Psychiatric diagnosis groups separately

Since our previously presented results (see Appendices A–D) suggested differential outcomes for individuals with and without a psychiatric diagnosis, the next procedure was to test these same

TABLE 2 Mixed model results for depression divided by with or without psychiatric diagnosis.

Effects	Coeff	SE	F(df1,df2)	p-Value	95% CI
Psychiatric diagnosis = 0					
Null model					
Intercept	7.56	0.44	$F(1103.31) = 291.55$	<0.001	[6.68, 8.44]
ICC	0.35				
Full model					
Intercept	7.78	4.16	$F(1,256) = 3.50$	0.063	[-0.41, 15.98]
Waves index			$F(2,256) = 24.82$	<0.001	
War versus COVID-19	1.91	0.64	$F(1,256) = 8.90$	0.003	[-3.41, −0.59]
Routine time versus COVID-19	−2.00	0.72	$F(1,256) = 7.78$	0.006	[-3.41, −0.59]
Gender (0 = female)	3.08	0.81	$F(1,256) = 14.56$	<0.001	[1.49, 4.67]
Age	−0.05	0.04	$F(1,256) = 1.32$	0.252	[-0.30, 0.03]
Education	−0.60	0.36	$F(1,256) = 2.83$	0.094	[-1.30,0.10]
Economic status	−0.49	0.43	$F(1,256) = 1.28$	0.260	[-1.34, 0.36]
Trauma history	1.39	0.27	$F(1,256) = 27.46$	<0.001	[0.87, 1.91]
Psychiatric diagnosis = 1					
Null model					
Intercept	11.32	0.70	$F(1,86.64) = 259.13$	<0.001	[9.92, 12.72]
ICC	0.58				
Full model					
Intercept	10.32	5.95	$F(1,196) = 3.01$	0.085	[-1.42, 22.05]
Waves index			$F(2,196) = 2.83$	0.061	
War versus COVID-19	−0.93	0.81	$F(1,196) = 1.30$	0.255	[-2.52, 0.67]
Routine time versus COVID-19	−2.24	0.94	$F(1,196) = 5.64$	0.019	[-4.09, −0.38]
Gender (0 = female)	−1.03	1.31	$F(1,196) = 0.62$	0.433	[-3.61, 1.55]
Age	−0.05	0.07	$F(1,196) = 0.61$	0.434	[-0.19, 0.08]
Education	0.08	0.62	$F(1,196) = 0.02$	0.894	[-1.14, 1.30]
Economic status	−0.44	0.66	$F(1,196) = 0.44$	0.509	[-1.75, 0.87]
Trauma history	1.18	0.24	$F(1,196) = 24.29$	<0.001	[0.71, 1.65]

Abbreviations: COVID-19, COVID-19 pandemic 2020; Routine, 2016; War, Israel-Gaza 2014 war.

outcomes in two separate models. We ran the models in two steps. In the first step, the unconditional models for depression and post-traumatic symptomatology showed that ICCs for the no-psychiatric diagnosis respondents were relatively high, but lower than the diagnosis group (Depression: $ICC_{no\text{-}psychiatric\ diagnosis} = 0.35$, $ICC_{psychiatric\ diagnosis} = 0.58$; PTSS: $ICC_{no\text{-}psychiatric\ diagnosis} = 0.46$, $ICC_{psychiatric\ diagnosis} = 0.68$), suggesting that those with a psychiatric diagnosis were more homogeneous for all three conditions (wartime, routine time, COVID-19), compared to those without a psychiatric diagnosis, for both depression and posttraumatic symptoms.

Results show that in the non-diagnosis group, female gender, trauma history, wartime versus COVID-19 and COVID-19 versus routine time predicted depression. Among those without a diagnosis, mean predicted depression was significantly higher in wartime compared to COVID-19, as well as compared to routine time, ($b = 1.91$, $p = 0.003$; $b = -2.00$, $p = 0.006$; respectively). In contrast, among those with a psychiatric diagnosis, depression levels differed only when comparing COVID-19 to routine time ($b = -2.24$, $p = 0.019$). Table 2 shows the mixed model results and Table 3 shows the ranking of the scores for PTSS.

Results show that for those with a psychiatric diagnosis, trauma history, being female and younger, as well as COVID-19 versus routine time, predicted depression. Among those with no psychiatric diagnosis, posttraumatic stress symptom levels were highest during wartime and significantly higher than in routine time. Among those with a diagnosis, assessments were higher during COVID-19 than in routine time but did not significantly differ from wartime. Table 4 shows the mixed model results and Table 5 shows the ranking of the scores.

Regarding demographics, women without a psychiatric diagnosis showed higher depression and PTSS levels, on average, compared to men without a psychiatric diagnosis ($b = 3.08$, $p < 0.001$; $b = 5.97$, $p = 0.001$; respectively) and young age predicted higher PTSS ($b = -0.25$, $p = 0.007$). However, these differences were non-significant for those with a psychiatric diagnosis. The number of previously experienced traumatic events remained a significant predictor of depression and posttraumatic stress in individuals with ($b = 2.51$; $p < 0.001$) and without a psychiatric diagnosis ($b = 3.15$; $p < 0.001$).

TABLE 3 Predicted marginal means for depression.

Main effects	Coeff	SE	95% CI
Psychiatric diagnosis = 0			
Index 1			
War	9.42[c]	3.50	[2.52, 16.31]
Routine time	5.51[a]	3.50	[-1.39, 12.40]
COVID-19	7.51[b]	3.51	[0.59, 14.42]
Psychiatric diagnosis = 1			
Index 1			
War	11.57[a]	4.86	[1.99, 21.15]
Routine time	10.26[a]	4.88	[0.63, 19.89]
COVID-19	12.50[a]	4.88	[2.87, 22.12]

Note: Latin letters for sub-group mean ranking from the lowest mean ("a") and so on, based on multiple pairwise comparisons with the Bonferroni correction. In squared brackets 95% confidence interval (95% CI).

Abbreviations: COVID-19, COVID-19 pandemic 2020; Routine, 2016; War, Israel-Gaza 2014 war.

[a,b,c]In the no psychiatric diagnosis group "a" denotes the lowest significant score compared to "b" the middle score and "c" the highest. In the Psychiatric diagnosis group no difference is observed between any of the contexts.

5 | DISCUSSION

In the current study, we examined whether individuals with a psychiatric diagnosis reacted differently to major environmental stressors, such as war and a pandemic, compared to those without a psychiatric diagnosis. We found that once trauma history was considered as an explanatory factor predicting the development of depression and PTSS in times of turmoil, no differences were found between individuals with and those without a psychiatric diagnosis. In other words, the variability observed on these outcomes was not explained by either having or not having a diagnosis of mental disorder, but by prior trauma exposure. In addition, in the current study, trauma history was the *only* significant predictor of depression and PTSS in individuals with a psychiatric diagnosis. Third, and not surprisingly, participants with a psychiatric diagnosis had experienced significantly more traumatic events than those without a psychiatric diagnosis (Lahav, 2020; Read et al., 2005). Together, these results strongly suggest that polytrauma is an important differentiator between individuals with and those without a psychiatric diagnosis (Liu et al., 2020; Pan et al., 2021). Finally, in support of previous studies, the influence of a traumatic past during subsequent hardships was relevant for the entire population (Brewin et al., 2000), as demonstrated by the significant association between traumatic exposure and symptomatology in the non-psychiatric diagnosis group as well. These results add to the assumption that trauma exposure is a major transdiagnostic factor that is associated with elevated risk for many psychopathologies.

Another complementary way to conceptualise our results is within the diathesis or vulnerability-stress approach. This theory suggests that kindling influences of trauma, stress, and life difficulties may increase vulnerability, thereby significantly worsening psychopathological reactions to traumatic events (Ingram & Luxton, 2005). In brief, the results of the current study suggest that a history of trauma may worsen the impact of traumatic events on PTSS and depression, and not the presence of a mental diagnosis per se. Furthermore, this increase may affect the course of any mental disorder, as well as functioning. Although not assessed in this study, it also supports findings regarding the possible causal impact of trauma

TABLE 4 Mixed model results for PTSS for those with and without a psychiatric diagnosis.

Effects	Coeff	SE	*F*/*t*	*p*-Value	95% CI
Psychiatric diagnosis = 0					
Null model					
Intercept	14.99	0.96	$F(1103.15) = 242.61$	<0.001	[13.08, 16.90]
ICC	0.46				
Full model					
Intercept	15.68	8.92	$F(1,256) = 3.09$	0.080	[-1.89, 33.25]
Waves index			$F(2,256) = 6.88$	0.001	
War versus COVID-19	2.38	1.43	$F(1,256) = 2.75$	0.098	[-0.45, 5.20]
Routine time versus COVID-19	−1.65	1.38	$F(1,256) = 1.42$	0.234	[-4.38, 1.07]
Gender (0 = female)	5.97	1.76	$F(1,256) = 11.50$	0.001	[2.50, 9.44]
Age	−0.25	0.09	$F(1,256) = 7.28$	0.007	[-0.43, −0.07]
Education	−0.77	0.78	$F(1,256) = 0.97$	0.325	[-2.31, 0.77]
Economic status	−0.37	0.94	$F(1,256) = 0.15$	0.696	[-2.23, 1.49]
Trauma history	3.15	0.58	$F(1,256) = 29.76$	<0.001	[2.01, 4.28]
Psychiatric diagnosis = 1					
Null model					
Intercept	22.95	1.52	$F(1,89.23) = 227.67$	<0.001	[19.93, 25.98]
ICC	0.68				
Full model					
Intercept	10.63	12.05	$F(1,196) = 0.78$	0.379	[-13.14, 34.39]
Waves index			$F(2,196) = 4.07$	0.019	
War versus COVID-19	−2.71	1.58	$F(1,196) = 2.94$	0.088	[-5.83, 0.41]
Routine time versus COVID-19	−3.75	1.36	$F(1,196) = 7.58$	0.006	[-6.43, −1.06]
Gender (0 = female)	−2.82	2.65	$F(1,196) = 1.13$	0.290	[-8.05, 2.42]
Age	0.19	0.14	$F(1,196) = 1.88$	0.172	[-0.08, 0.47]
Education	−0.13	1.25	$F(1,196) = 0.01$	0.916	[-2.60, 2.33]
Economic status	−0.67	1.35	$F(1,196) = 0.25$	0.617	[-3.33, 1.98]
Trauma history	2.51	0.49	$F(1,196) = 26.74$	<0.001	[1.55, 3.47]

Abbreviations: COVID-19, COVID-19 pandemic 2020; Routine, 2016; War, Israel-Gaza 2014 war.

in the development, triggering or maintenance of a mental disorder (Copeland et al., 2018).

For the group without psychiatric diagnoses, we found that being female and younger also predicted depression and PTSS. Support for these findings can be found in studies that assessed the impact of trauma in the case of civilians during wartime (Schlenger et al., 2002) and the COVID-19 pandemic (Breslau et al., 2021; Elbay et al., 2020; Rossi et al., 2020). The higher levels of pathology in the younger age group may be due to economic challenges and concerns about the vocational future of this more precarious workforce (Salari et al., 2020). The fact that these results were not replicated for individuals with psychiatric diagnosis may suggest either a statistical artefact due to the larger variance in this population or a differential impact of economic measures on the psychiatric diagnosis group during crisis periods.

Our second question related to whether early reactivity to war or to COVID-19 could be differentiated from each other and from routine time within both the study groups. For the group without a psychiatric diagnosis, wartime was associated with higher depression symptoms and PTSS than routine time; wartime was also associated with higher depression symptoms than reported during COVID-19. There were no differences in PTSS during routine time and COVID-19. One reason that COVID-19 was less stress-evoking than war might be that the Israeli health system was not overwhelmed during the pandemic. It is also possible that due to the recurrence of war in Israeli society, it is associated with more depression and stress than

TABLE 5 Predicted marginal means for PTSS.

Main effects	Coeff	SE	95% CI
Psychiatric diagnosis = 0			
Index 1			
War	16.96[b]	7.42	[2.35, 31.57]
Routine time	12.93[a]	7.42	[-1.69, 27.54]
COVID-19	14.58[ab]	7.46	[-0.12, 29.28]
Psychiatric diagnosis = 1			
Index 1			
War	22.97[ab]	9.84	[3.56, 42.39]
Routine time	21.94[a]	9.87	[2.47, 41.40]
COVID-19	25.68[b]	9.89	[6.17, 45.20]

Note: Latin letters for sub-group mean ranking from the lowest mean ("a") and so on, based on multiple pairwise comparisons with the Bonferroni correction. In squared brackets 95% confidence interval (95% CI).

Abbreviations: COVID-19, COVID-19 pandemic 2020; Routine, 2016; War, Israel-Gaza 2014 war.

[a,b]In both the psychiatric and no-psychiatric diagnosis group "ab" denotes no significant difference with neither "a" nor "b", while "b" denotes a significant difference compared to "a".

the COVID-19 crisis. These findings are consistent with studies (Gilbar et al., 2022) and meta-analyses (Hyland et al., 2020) suggesting that anxiety and depression changes did not reach clinical significance in the vast majority of individuals during COVID-19. Nonetheless, it is important to note that during wartime, assessments were performed close to the onset of the war, whereas for COVID-19, they were performed a few months into the pandemic. Several studies have suggested adaptation to high-level stressors in wartime (Bleich et al., 2006) as well as during the COVID-19 crisis (Hyland et al., 2020), and it may be that the participants had already undergone some process of adaptation to the COVID-19 pandemic by the time they were assessed.

Individuals with a psychiatric diagnosis did not develop more depressive symptomatology during wartime or the pandemic compared to routine time, although in this group, there were higher PTSS during the COVID-19 context compared with routine time. These results highlight that for individuals with a psychiatric diagnosis, the COVID-19 pandemic in our sample was more stressful than wartime, whereas for those without a psychiatric diagnosis, wartime was more stressful. Individuals with a psychiatric diagnosis who are more in touch with health professionals might have been cued more often as to the immediate threats of COVID-19 compared to the threats of war. In addition, enforced quarantine might have brought about more traumatic stress than war or routine times, as many individuals with a diagnosis were cut off from their regular sources of social and in-person psychological support and were considered a high-risk group for COVID-19 illness (Sheridan Rains et al., 2021) due to them having more health problems and having less resources to cope with these stresses. The major clinical implication of the current study is for prevention policy to focus on individuals who have been traumatised previously. Indeed although a psychiatric past is not what might worsen symptomatology many of those with a psychiatric past will be especially vulnerable to traumatic stress; second, there is a requirement to assess the needs of individuals with a psychiatric diagnosis exposed to large-scale traumatic events as their past often include traumatic events.

Although the current study has several strengths, namely the comparison of three different periods—one of which being a peaceful/non-pandemic control period—to assess both those with and without a psychiatric diagnosis, some limitations must be mentioned. First, since participants were recruited through convenience sampling, they are not representative of the population from which they were drawn, and there is thus a potential for selection and other biases. Second, the data were based on self-report measures; the use of clinical interviews may be more accurate, especially in the assessment of the phase of the disorder and is recommended for future studies. Third, our small sample limits our ability to assess differences between different types of psychiatric diagnoses. Larger samples including larger groups of individuals with specific diagnoses could be assessed in the future and furthermore more general measures of active psychopathology (such as the presence of anxiety, OCD or psychosis), the phase of pathology or the continued psychotropic use or/and whether individuals were in therapy might be helpful in delineating the psychiatric diagnosis group. Fourth, emotional reactions to wars and pandemics are ongoing, dynamic and fluctuating. An assessment at the beginning of a war might not be comparable to an assessment three months into the COVID-19 crisis. Fifth, we used the common approach to sum up the number of types of traumas the respondents experienced but did not touch upon frequency and age at which these were experienced. Finally, although we used well-established statistical procedures to ascertain the validity of the within- and between analyses comparing responses during the three waves of this study, not all participated filled in all the questionnaires.

In conclusion, the current study shows the influence of past trauma severity on reactions to large-scale community adversity. It suggests specifically that having a psychiatric diagnosis in itself might be less central to how one reacts to highly stressful events than having a history of trauma. The results also strongly point to the fact that individuals with a psychiatric diagnosis are a vulnerable group because of their high rate of past traumatisation. These understandings are important, as they suggest the need to apply Trauma Informed Care approaches for individuals with mental health issues living in the community (Mihelicova et al., 2018), especially in times of crisis. Such an approach may reduce the risk of retraumatisation or symptom worsening in individuals with past trauma. Finally, we also suggest that compared to routine times individuals within the diagnosis group were more affected by the COVID-19 context, whilst the general population in Israel was more affected by wartime. This illustrates the importance of understanding the context of potentially highly stressful situations and their differential effect on individuals

with mental health problems. Indeed, it is important for therapists to understand the specific meaning and context of these events for individuals living with a mental health condition.

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CONFLICT OF INTEREST STATEMENT

No conflict of interest are declared by any of the authors.

DATA AVAILABILITY STATEMENT

All data are available per request to the corresponding author.

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REFERENCES

Bendor, A., Gelkopf, M., & Sigal, M. (1993). Insanity and war: The Gulf War and a psychiatric institution. *American Journal of Psychotherapy*, *47*(3), 424–442. https://doi.org/10.1176/appi.psychotherapy.1993.47.3.424

Bendor, A., Gelkopf, M., & Sigal, M. (1994). Schizophrenic inpatients and the chemical war threat: The Israeli experience of the Gulf war. *The Journal of Nervous and Mental Disease*, *182*(2), 114–116. https://doi.org/10.1097/00005053-199402000-00010

Bleich, A., Gelkopf, M., Melamed, Y., & Solomon, Z. (2006). Mental health and resiliency following 44 months of terrorism: A survey of an Israeli national representative sample. *BMC Medicine*, *4*(1). https://doi.org/10.1186/1741-7015-4-21

Breslau, J., Finucane, M. L., Locker, A. R., Baird, M. D., Roth, E. A., & Collins, R. L. (2021). A longitudinal study of psychological distress in the United States before and during the COVID-19 pandemic. *Preventive Medicine*, *143*, 106362. https://doi.org/10.1016/j.ypmed.2020.106362

Brewin, C. R., Andrews, B., & Valentine, J. D. (2000). Meta-analysis of risk factors for posttraumatic stress disorder in trauma-exposed adults. *Journal of Consulting and Clinical Psychology*, *68*(5), 748–766. https://doi.org/10.1037/0022-006X.68.5.748

Carlson, E. B., Smith, S. R., Palmieri, P. A., Dalenberg, C., Ruzek, J. I., Kimerling, R., Burling, T. A., & Spain, D. A. (2011). Development and validation of a brief self-report measure of trauma exposure: The trauma history screen. *Psychological Assessment*, *23*(2), 463–477. https://doi.org/10.1037/a0022294

Cohen, C. I. (1993). Poverty and the course of schizophrenia: Implications for research and policy. *Psychiatric Services*, *44*(10), 951–958. https://doi.org/10.1176/ps.44.10.951

Copeland, W. E., Shanahan, L., Hinesley, J., Chan, R. F., Aberg, K. A., Fairbank, J. A., Van Den Oord, E. J. C. G., & Costello, E. J. (2018). Association of childhood trauma exposure with adult psychiatric disorders and functional outcomes. *JAMA Network Open*, *1*(7), 1–11. https://doi.org/10.1001/jamanetworkopen.2018.4493

COVID-19 pandemic in Israel. (2021). In Wikipedia. Retrieved from https://en.wikipedia.org/w/index.php?title=COVID-19_pandemic_in_Israel&oldid=1037791764

Czaplicki, A., Reich, H., & Hegerl, U. (2022). Lockdown measures against the spread of the COVID-19 pandemic: Negative effects for people living with depression. *Frontiers in Psychology*, *13*, 789173. https://doi.org/10.3389/fpsyg.2022.789173

Druss, B. G. (2020). Addressing the COVID-19 pandemic in populations with SeriousMental illness. *JAMA Psychiatry*, *77*(9), 891–892. https://doi.org/10.1001/jamapsychiatry.2020.0894

Eckart, R. E., Shry, E. A., Scoville, S. L., Thompson, C. M., Stajduhar, K. C., & Krasuski, R. A. (2004). Cardiopulmonary and mental health diagnoses surrounding the September 11 terrorist acts in a military population. *Military Medicine*, *169*(9), 675–680. https://doi.org/10.7205/MILMED.169.9.675

Elbay, R. Y., Kurtulmuş, A., Arpacıoğlu, S., & Karadere, E. (2020). Depression, anxiety, stress levels of physicians and associated factors in Covid-19 pandemics. *Psychiatry Research*, *290*, 113130. https://doi.org/10.1016/j.psychres.2020.113130

Firth, J., Siddiqi, N., Koyanagi, A., Siskind, D., Rosenbaum, S., Galletly, C., Allan, S., Caneo, C., Carney, R., Carvalho, A. F., Chatterton, M. L., Correll, C. U., Curtis, J., Gaughran, F., Heald, A., Hoare, E., Jackson, S. E., Kisely, S., Lovell, K., …, & Stubbs, B. (2019). The lancet psychiatry commission: A blueprint for protecting physical health in people with mental illness. *The Lancet Psychiatry*, *6*(8), 675–712. https://doi.org/10.1016/S2215-0366(19)30132-4

Franz, V. A., Glass, C. R., Arnkoff, D. B., & Dutton, M. A. (2009). The impact of the September 11th terrorist attacks on psychiatric patients: A review. *Clinical Psychology Review*, *29*(4), 339–347. https://doi.org/10.1016/j.cpr.2009.02.002

Gelkopf, M., Ben-Dor, A., Abu-Zarkah, S., & Sigal, M. (1995). Hospital at war: Treatment changes in mental patients. *Social Psychiatry and Psychiatric Epidemiology*, *30*(6), 256–260. https://doi.org/10.1007/BF00805791

Gelkopf, M., Lapid Pickman, L., Carlson, E. B., & Greene, T. (2019). The dynamic relations among peritraumatic posttraumatic stress symptoms: An experience sampling study during wartime. *Journal of Traumatic Stress*, *32*(1), 119–129. https://doi.org/10.1002/jts.22374

Gelkopf, M., Lapid Pickman, L., Grinapol, S., Werbeloff, N., Carlson, E. B., & Greene, T. (2017). Peritraumatic reaction courses during war: Gender, serious mental illness, and exposure. *Psychiatry*, *80*(4), 382–398. https://doi.org/10.1080/00332747.2017.1286893

Gilbar, O., Gelkopf, M., Berger, R., & Greene, T. (2022). Risk factors for depression and anxiety during COVID-19 in Israel: A two-wave study before and during the pandemic. *Stress and Health*, *38*(4), 736–745. https://doi.org/10.1002/SMI.3127

Greene, T., Gelkopf, M., Fried, E. I., Robinaugh, D. J., & Lapid Pickman, L. (2020). Dynamic network analysis of negative emotions and DSM-5 posttraumatic stress disorder symptom clusters during conflict. *Journal of Traumatic Stress*, *33*(1), 72–83. https://doi.org/10.1002/jts.22433

Grubaugh, A. L., Zinzow, H. M., Paul, L., Egede, L. E., & Frueh, B. C. (2011). Trauma exposure and posttraumatic stress disorder in adults with severe mental illness: A critical review. *Clinical Psychology Review*, *31*(6), 883–899. https://doi.org/10.1016/j.cpr.2011.04.003

Halperin, D., Levy, T., Avissar, S., & Schreiber, G. (2017). Severe mental illness and acute stress: A study of service utilization in a conflict zone. *Psychiatric Quarterly*, *88*(1), 213–220. https://doi.org/10.1007/s11126-016-9451-1

Hao, F., Tan, W., Jiang, L., Zhang, L., Zhao, X., Zou, Y., Hu, Y., Luo, X., Jiang, X., McIntyre, R. S., Tran, B., Sun, J., Zhang, Z., Ho, R., Ho, C., & Tam, W. (2020). Do psychiatric patients experience more psychiatric symptoms during COVID-19 pandemic and lockdown? A case-control study with service and research implications for

immunopsychiatry. *Brain, Behavior, and Immunity*, *87*, 100–106. https://doi.org/10.1016/j.bbi.2020.04.069

Hardy, K. V., & Mueser, K. T. (2017). Trauma, psychosis and posttraumatic stress disorder. *Frontiers in Psychiatry*, *8*, 220. https://doi.org/10.3389/fpsyt.2017.00220

Heck, R. H., Thomas, S. L., & Tabata, L. N. (2013). Multilevel and longitudinal modeling with IBM SPSS. In *Multilevel and longitudinal modeling with IBM SPSS* (2nd ed.). Routledge. https://doi.org/10.4324/9780203701249

Hyland, P., Shevlin, M., Brewin, C. R., Cloitre, M., Downes, A. J., Jumbe, S., Karatzias, T., Bisson, J. I., & Roberts, N. P. (2017). Validation of posttraumatic stress disorder (PTSD) and complex PTSD using the International Trauma Questionnaire. *Acta Psychiatrica Scandinavica*, *136*(3), 313–322. https://doi.org/10.1111/ACPS.12771

Hyland, P., Shevlin, M., McBride, O., Murphy, J., Karatzias, T., Bentall, R. P., Martinez, A., & Vallières, F. (2020). Anxiety and depression in the Republic of Ireland during the COVID-19 pandemic. *Acta Psychiatrica Scandinavica*, *142*(3), 249–256. https://doi.org/10.1111/ACPS.13219

Iasevoli, F., Fornaro, M., D'Urso, G., Galletta, D., Casella, C., Paternoster, M., Buccelli, C., & de Bartolomeis, A. (2021). Psychological distress in patients with serious mental illness during the COVID-19 outbreak and one-month mass quarantine in Italy. *Psychological Medicine*, *51*(6), 1054–1056. https://doi.org/10.1017/S0033291720001841

Ingram, R. E., & Luxton, D. D. (2005). Vulnerability-stress models. In B. L. Hankin & J. R. Z. Abela (Eds.), *Development of psychopathology: A vulnerability-stress perspective* (pp. 32–46). SAGE Publishing.

Jovanovic, N., Kuwert, P., Vukovic, I. S., Lavor, D. P., Medved, V., Kovac, M., Spitzer, C., Dudeck, M., Vogel, M., Freyberger, H. J., & Grabe, H. J. (2010). Impact of war trauma and posttraumatic stress disorder on psychopathology in Croatian and German patients with severe mental illness. *Croatian Medical Journal*, *51*(2), 131–136. https://doi.org/10.3325//cmj.2010.51.131

Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of. *Archives of General Psychiatry*, *62*(6), 593–602. https://doi.org/10.1001/archpsyc.62.6.593

Kessler, R. C., Chiu, W. T., Demler, O., & Walters, E. E. (2005). Prevalence, severity, and comorbidity of 12-month DSM-IV disorders in the national comorbidity survey replication. *Archives of General Psychiatry*, *62*(6), 617–627. https://doi.org/10.1001/archpsyc.62.6.617

Kozloff, N., Mulsant, B. H., Stergiopoulos, V., & Voineskos, A. N. (2020). The COVID-19 global pandemic: Implications for people with schizophrenia and related disorders. *Schizophrenia Bulletin*, *46*(4), 752–757. https://doi.org/10.1093/schbul/sbaa051

Kroenke, K., Spitzer, R. L., & Williams, J. B. W. (2001). The PHQ-9: Validity of a brief depression severity measure. *Journal of General Internal Medicine*, *16*(9), 606–613. https://doi.org/10.1046/j.1525-1497.2001.016009606.x

Lahav, Y. (2020). Psychological distress related to COVID-19 – The contribution of continuous traumatic stress. *Journal of Affective Disorders*, *277*, 129–137. https://doi.org/10.1016/j.jad.2020.07.141

Lapid Pickman, L., Gelkopf, M., & Greene, T. (2021). Emotional reactivity to war stressors: An experience sampling study in people with and without different psychiatric diagnoses. *Stress and Health*, *37*(1), 127–139. https://doi.org/10.1002/smi.2978

Levav, I., Novikov, I., Grinshpoon, A., Rosenblum, J., & Ponizovsky, A. (2006). Health services utilization in Jerusalem under terrorism. *American Journal of Psychiatry*, *163*(8), 1355–1361. https://doi.org/10.1176/appi.ajp.163.8.1355

Little, R. J. A. (1988). A test of missing completely at random for multivariate data with missing values. *Journal of the American Statistical Association*, *83*(404), 1198–1202. https://doi.org/10.1080/01621459.1988.10478722

Liu, C. H., Stevens, C., Conrad, R. C., & Hahm, H. C. (2020). Evidence for elevated psychiatric distress, poor sleep, and quality of life concerns during the COVID-19 pandemic among U.S. young adults with suspected and reported psychiatric diagnoses. *Psychiatry Research*, *292*, 113345. https://doi.org/10.1016/j.psychres.2020.113345

Mauritz, M. W., Goossens, P. J. J., Draijer, N., & van Achterberg, T. (2013). Prevalence of interpersonal trauma exposure and trauma-related disorders in severe mental illness. *European Journal of Psychotraumatology*, *4*(1), 19985. https://doi.org/10.3402/ejpt.v4i0.19985

McMillan, K. A., & Asmundson, G. J. G. (2016). PTSD, social anxiety disorder, and trauma: An examination of the influence of trauma type on comorbidity using a nationally representative sample. *Psychiatry Research*, *246*, 561–567. https://doi.org/10.1016/J.PSYCHRES.2016.10.036

Melamed, Y., Solomon, Z., Szor, H., & Elizur, A. (1996). The impact of the Gulf war on the mental health of schizophrenic patients. *Psychiatry*, *59*(3), 267–273. https://doi.org/10.1080/00332747.1996.11024767

Mihelicova, M., Brown, M., & Shuman, V. (2018). Trauma-informed care for individuals with serious mental illness: An avenue for community psychology's involvement in community mental health. *American Journal of Community Psychology*, *61*(1–2), 141–152. https://doi.org/10.1002/ajcp.12217

Mueser, K. T., Rosenberg, S. D., Goodman, L. A., & Trumbetta, S. L. (2002). Trauma, PTSD, and the course of severe mental illness: An interactive model. *Schizophrenia Research*, *53*(1–2), 123–143. https://doi.org/10.1016/S0920-9964(01)00173-6

Mueser, K. T., Salyers, M. P., Rosenberg, S. D., Ford, J. D., Fox, L., & Carty, P. (2001). Psychometric evaluation of trauma and posttraumatic stress disorder assessments in persons with severe mental illness. *Psychological Assessment*, *13*(1), 110–117. https://doi.org/10.1037/1040-3590.13.1.110

Mueser, K. T., Trumbetta, S. L., Rosenberg, S. D., Vidaver, R., Goodman, L. B., Osher, F. C., Auciello, P., & Foy, D. W. (1998). Trauma and posttraumatic stress disorder in severe mental illness. *Journal of Consulting and Clinical Psychology*, *66*(3), 493–499. https://doi.org/10.1037/0022-006X.66.3.493

Neria, Y., Bromet, E. J., Sievers, S., Lavelle, J., & Fochtmann, L. J. (2002). Trauma exposure and posttraumatic stress disorder in psychosis: Findings from a first-admission cohort. *Journal of Consulting and Clinical Psychology*, *70*(1), 246–251. https://doi.org/10.1037/0022-006X.70.1.246

Olema, D. K., Catani, C., Ertl, V., Saile, R., & Neuner, F. (2014). Prevalence and psychological correlates of complicated. *Journal of Traumatic Stress*, *27*(1), 35–41. https://doi.org/10.1002/jts.21892

Ozer, E. J., Best, S. R., Lipsey, T. L., & Weiss, D. S. (2003). Predictors of posttraumatic stress disorder and symptoms in adults: A meta-analysis. *Psychological Bulletin*, *129*(1), 52–73. https://doi.org/10.1037/0033-2909.129.1.52

Pan, K. Y., Kok, A. A. L., Eikelenboom, M., Horsfall, M., Jörg, F., Luteijn, R. A., Rhebergen, D., van Oppen, P., Giltay, E. J., & Penninx, B. W. J. H. (2021). The mental health impact of the COVID-19 pandemic on people with and without depressive, anxiety, or obsessive-compulsive disorders: A longitudinal study of three Dutch case-control cohorts. *The Lancet Psychiatry*, *8*(2), 121–129. https://doi.org/10.1016/S2215-0366(20)30491-0

Read, J., Os, J., Morrison, A. P., & Ross, C. A. (2005). Childhood trauma, psychosis and schizophrenia: A literature review with theoretical and clinical implications. *Acta Psychiatrica Scandinavica*, *112*(5), 330–350. https://doi.org/10.1111/j.1600-0447.2005.00634.x

Rossi, R., Socci, V., Pacitti, F., Di Lorenzo, G., Di Marco, A., Siracusano, A., & Rossi, A. (2020). Mental health outcomes among frontline and second-line health care workers during the coronavirus disease 2019 (COVID-19) pandemic in Italy. *JAMA Network Open*, *3*(5), e2010185. https://doi.org/10.1001/jamanetworkopen.2020.10185

Salari, N., Hosseinian-Far, A., Jalali, R., Vaisi-Raygani, A., Rasoulpoor, S., Mohammadi, M., Rasoulpoor, S., & Khaledi-Paveh, B. (2020). Prevalence of stress, anxiety, depression among the general population

during the COVID-19 pandemic: A systematic review and meta-analysis. *Globalization and Health*, *16*(1), 1–11. https://doi.org/10.1186/S12992-020-00589-W/TABLES/2

Schlenger, W. E., Caddell, J. M., Ebert, L., Jordan, B. K., Rourke, K. M., Wilson, D., Thalji, L., Dennis, J. M., Fairbank, J. A., & Kulka, R. A. (2002). Psychological reactions to terrorist attacks: Findings from the national study of Americans' reactions to September 11. *JAMA*, *288*(5), 581–588. https://doi.org/10.1001/JAMA.288.5.581

Schminkey, D. L., von Oertzen, T., & Bullock, L. (2016). Handling missing data with multilevel structural equation modeling and full information Maximum likelihood techniques. *Research in Nursing and Health*, *39*(4), 286–297. https://doi.org/10.1002/nur.21724

Sheridan Rains, L., Johnson, S., Barnett, P., Steare, T., Needle, J. J., Carr, S., Lever Taylor, B., Bentivegna, F., Edbrooke-Childs, J., Scott, H. R., Rees, J., Shah, P., Lomani, J., Chipp, B., Barber, N., Dedat, Z., Oram, S., Morant, N., Simpson, A., …, & Cavero, V. (2021). Early impacts of the COVID-19 pandemic on mental health care and on people with mental health conditions: Framework synthesis of international experiences and responses. *Social Psychiatry and Psychiatric Epidemiology*, *56*(1), 13–24. https://doi.org/10.1007/s00127-020-01924-7

State of Israel Ministry of Health. (n.d.). Cases and deaths dashboard. Retrieved August 26, 2021, from Retrieved from https://datadashboard.health.gov.il/COVID-19/general?utm_source=go.gov.il&utm_medium=referral

Sternik, I., Solomon, Z., Ginzburg, K., & Enoch, D. (1999). Psychiatric patients in war: A study of anxiety, distress and world assumptions. *Anxiety, Stress & Coping*, *12*(3), 235–246. https://doi.org/10.1080/10615809908250476

Strous, R. D., Ofir, D., Brodsky, O., Yakirevitch, J., Drannikov, A., Navo, N., & Kotler, M. (2004). Reactions of psychiatric inpatients to the threat of biological and chemical warfare in Israel. *The Journal of Nervous and Mental Disease*, *192*(4), 318–323. https://doi.org/10.1097/01.nmd.0000120891.42455.34

Tang, W., Hu, T., Hu, B., Jin, C., Wang, G., Xie, C., Chen, S., & Xu, J. (2020). Prevalence and correlates of PTSD and depressive symptoms one month after the outbreak of the COVID-19 epidemic in a sample of home-quarantined Chinese University students. *Journal of Affective Disorders*, *274*, 1–7. https://doi.org/10.1016/j.jad.2020.05.009

Van Rheenen, T. E., Meyer, D., Neill, E., Phillipou, A., Tan, E. J., Toh, W. L., & Rossell, S. L. (2020). Mental health status of individuals with a mood-disorder during the COVID-19 pandemic in Australia: Initial results from the COLLATE project. *Journal of Affective Disorders*, *275*, 69–77. https://doi.org/10.1016/j.jad.2020.06.037

Vissink, C. E., van Hell, H. H., Galenkamp, N., & van Rossum, I. W. (2021). The effects of the COVID-19 outbreak and measures in patients with a pre-existing psychiatric diagnosis: A cross-sectional study. *Journal of Affective Disorders Reports*, *4*, 100102. https://doi.org/10.1016/j.jadr.2021.100102

Wanklyn, S. G., Belus, J. M., Pukay-Martin, N. D., Cyr, K. S., Girard, T. A., & Monson, C. M. (2016). Trauma types as differential predictors of posttraumatic stress disorder (PTSD), major depressive disorder (MDD), and their comorbidity. *Canadian Journal of Behavioural Science*, *48*(4), 296–305. https://doi.org/10.1037/CBS0000056

Weathers, F. W., Litz, B. T., Keane, T. M., Palmieri, P. A., Marx, B. P., & Schnurr, P. P. (2013). PTSD checklist for DSM–5 (PCL-5) Retrieved from https://www.ptsd.va.gov/professional/assessment/adult-sr/ptsd-checklist.asp

Zhand, N., & Joober, R. (2021). Implications of the COVID-19 pandemic for patients with schizophrenia spectrum disorders: Narrative review. *The British Journal of Psychiatry*, *7*(1), e35. https://doi.org/10.1192/bjo.2020.157

Zubin, J., & Spring, B. (1977). Vulnerability: A new view of schizophrenia. *Journal of Abnormal Psychology*, *86*(2), 103–126. https://doi.org/10.1037/0021-843X.86.2.103

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