Predictors of Psychological Distress in Frontline Journalists: Common Denominators Across Three Decades of Conflicts

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Objective: To determine risk factors for symptoms of PTSD and depression in frontline journalists that traverse type of conflict, degree of exposure to stressors, language, and culture. *Methods:* A retrospective analysis of 1,103 frontline journalists from 12 datasets (Balkans, 9/11 attacks, Iraq, Mexico, Israel, Syria, Afghanistan, Iran, Kenya, refugee crisis, user-generated content [visually traumatic images], and moral injury project) accumulated between 2000 and 2022. Symptoms of PTSD were assessed, in the first language of participants, with validated versions of the Revised Impact of Event Scale ($\omega = .96$) and PTSD Checklist for DSM-5 ($\omega = .96$) and symptoms of depression with validated versions of the Beck Depression Inventory-Revised ($\omega = .92$). Data were analyzed using linear mixed models to take into account inherent between-study differences. *Results:* Mean age and work duration were 39.12 ($SD = 9.58$) and 14.64 ($SD = 9.13$) years, respectively. Most journalists were male (66.27%), university educated (82.23%), and in a relationship (56.12%). While symptom severity scores varied considerably across studies, three variables were found that predicted symptoms of PTSD and depression in all studies, namely being female, single, and having a past history of psychiatric difficulties. *Conclusions:* News organizations have a moral obligation to care for journalists sent into harm's way. The identification of risk factors for symptoms of PTSD and depression common to journalists irrespective of the nature of the conflict covered, degree of exposure to conflict, and differences in language and culture is an important step in promoting this duty of care.

Keywords: prevention, PTSD, depression, journalist, psychoeducation

The work of frontline journalists is inherently dangerous. They confront grave risks to their physical and mental health to keep us informed about important events on a global scale. The physical dangers of reporting on war, political unrest, drug trafficking, and natural and man-made disasters are well documented. Since 1992, 1,436 journalists have been killed for reasons related to their work with many more having been threatened, assaulted, tortured, and imprisoned (Committee to Protect Journalists, 2022). The adverse consequences of their work on their psychological well-being have historically been less well understood. However, research on the topic started in 2000 and there is now a rich body of quantitative literature available that speaks to the emotional challenges faced by those in the profession (Osmann et al., 2021). Frontline journalists have been found to experience elevated rates of posttraumatic stress disorder (PTSD) and depression compared to the general population (Aoki et al., 2013; Osmann et al., 2021). Data also attest to the significant correlation of PTSD and depression scores in journalists (Feinstein et al., 2002) in keeping with similar observations in

other professions (Rytwinski et al., 2013). Comorbidity in turn can add to the therapeutic challenge.

News organizations have taken note of the available data and have ramped up efforts to increase journalist safety (A Culture of Safety Alliance, 2022). However, with 23 major, ongoing conflicts in 2022 (Wikipedia contributors, 2022) and a concerning number of warring factions intentionally targeting members of the press, frontline journalists will have no other choice than to put themselves at risk and to face the potentially adverse consequences their work brings with it. This situation is often exacerbated for freelance journalists who generally do not have the resources of a major publication at their disposal (Gonzalez, 2014).

What is less clear from the emerging data are the variables, be they demographic or personal that predict emotional distress in frontline journalists. There is a arge general psychiatry literature that has identified various potential risk factors in this regard in nonmilitary samples. A meta-analysis of 77 studies divided these into three categories according to effect size: events during and after the trauma (greater trauma severity, lack of social support, and more subsequent life stress) with a moderate effect size; demographic and prior history variables (female gender, lower socioeconomic class, less education, lower intelligence, positive psychiatric history, history of abuse, childhood adversity, family history of psychiatric illness) with a weaker effect size; and thirdly, two variables (younger age and minority race status) with the weakest sample size (Brewin et al., 2000). Which of these pertain to frontline journalists and whether they traverse national, ethnic, and cultural divides is unclear. This last point is particularly germane given the widespread geographical

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location of war (Wikipedia contributors, 2022) covered by journalists. Answers to questions like these would be informative and potentially helpful to journalists and their news organizations when it comes to detecting and managing the mental health challenges that can arise as a consequence of exposure to conflict.

With this in mind and cognizant of the risk factors identified for trauma-related psychopathology, we hypothesized that being female (Hu et al., 2017; Salk et al., 2017), having less support (Freedman et al., 2015; Teo et al., 2013) and a past psychiatric history (Beliveau et al., 2019), lower education (Herrera-Escobar et al, 2019), and younger age (Breslau et al., 1999) would emerge as predictors of PTSD symptoms in frontline journalists.

Method

Dataset

An analysis was undertaken of 12 behavioral datasets of frontline journalists accumulated between 2000 and 2022. All data were collected by one research center conducting studies on the 12 conflicts, which are listed in Table 1.

The combined dataset is comprised of 1,103 journalists engaged in current affairs reportage with a primary focus on conflict. The user-generated content (UGC) study was included because the American Psychiatric Association has now recognized that repetitive and prolonged exposure to visually traumatic images as part of a person's work is a sufficient stressor to cause PTSD (American Psychiatric Association, 2013). The moral injury data were included because the journalists who were selected to take part in the study were those whose work focused on conflict. There is also a strong association between moral injury and PTSD (Griffin et al., 2019). Exposure to personal life-threatening events in the 12 studies included ranged from none in the UGC group to minimal in the Migration study to extreme in the Afghan group, where journalists were not only the target of specific acts of terror directed against the media but were also exposed to these acts perpetrated on Afghan citizens in general.

Collected Data

Most studies were undertaken in English except for Mexico (Spanish), Iran (Farsi), and Afghanistan (Farsi). Detailed information about each study can be found in their respective publication.

The general demographic data collected included age, sex, relationship status (married or in a relationship, single, divorced, or widow/ed), years worked as a journalist, and level of education (high school or college/university).

Three psychometric scales were used to collect the behavioral data:

1. The Revised Impact of Events Scale (IES-R; $n = 899$; Weiss, 2007) was used in 11 of the 12 studies. It contains 22 questions that closely follow the DSM-IV criteria for posttraumatic stress disorder (Frances et al., 1994). The IES-R consists of three subscales that look at avoidance, intrusive (intrusion/re-experiencing), and hyperarousal phenomena. The questions are answered on a 5-point Likert scale ranging from $0 = Not\ at\ all$ to $4 = Extremely$. Threshold scores for the IES-R, as recommended by the authors (2007) are as follows: $0 = None$; $(0,1) = Mild$; $(1,2) = Moderate$; $(2,3) = Moderately\ severe$; $(3,4) = Severe$. McDonalds's ω for the IES-R in this study was .96 for the full IES-R and .92, .94, and .91 for the avoidance, intrusive, and hyperarousal subscales, respectively.

2. The PTSD Checklist for DSM-5 (PCL-5; $n = 159$; Weathers et al., 2013) was used in one of the 12 studies. It assesses symptom categories on four subscales namely intrusion, avoidance, negative alterations in cognitions and mood, and alterations in arousal and reactivity. Responses on the 20-item measure are scored on a 5-point Likert scale ranging from $0 = Not\ at\ all$ to $4 = Extremely$. A cutoff score of ≥ 33 on a total score range from 0 to 80 indicates a provisional PTSD diagnosis (Weathers et al., 2013). McDonalds's ω was .96 for the total PCL-5 and .93, .84, .94, and .92 for categories B–E.

3. The Beck Depression Inventory-Revised (BDI-II; $n = 960$; Beck et al., 1996) was used in 10 of the 12 studies. It captures depressive symptomatology and consists of two subscales measuring cognitive and somatic-affective symptoms, respectively. The 21 question instrument is scored on a 4-point Likert scale ranging from $0 = Not\ at\ all$ to $3 = Severely—it\ bothered\ me\ a\ lot$. Beck et al. (1996) suggest the following guidelines to interpret the BDI-II: minimal range $= 0–13$; mild depression $= 14–19$; moderate depression $= 20–28$; severe depression $= 29–63$. McDonald's ω

Table 1
Studies Comprising the Dataset

No.	Study description	Sample size	Dates of data collection
1	Civil wars in the Balkans (Feinstein et al., 2002)[a]	140	1999–2001
2	9/11 attack in New York City (Feinstein, 2003)	46	2001
3	Iraq war (Feinstein & Nicolson, 2005)[a]	84	2003
4	Drug wars in Mexico (Feinstein, 2012)	104	2011–2012
5	Israel (Levaot et al., 2013)	38	2012–2013
6	Effects of exposure to uncensored user-generated content (UGC), i.e., images of graphic violence (Feinstein et al., 2014)	117	2013–2014
7	Syria (Feinstein & Starr, 2015)[a]	59	2015
8	Election violence and Westgate Mall terror attack in Kenya (Feinstein et al., 2015)	57	2015–2016
9	Iran (Feinstein et al., 2016)	114	2015–2016
10	Migration crisis in Europe (Feinstein et al., 2018)[a]	80	2017
11	Afghanistan (Osmann et al., 2020)	105	2018–2019
12	Moral injury project (Osmann et al., 2022)[a]	159	2016–2020

[a]Western journalists.

for the total BDI-II was .92. McDonald's ω for the cognitive and somatic-affective subscales was .86 and .87, respectively.

Journalists were also asked whether they had ever sought mental health therapy. Three options were offered for yes/no answers: trauma-related, personal (nontrauma), or both. When it came to the PTSD questionnaires, we specifically asked journalists to rate their responses to trauma-based experiences.

Ethics Approval

All studies were approved by the Research Ethics Board at Sunnybrook Health Sciences Centre affiliated with the University of Toronto.

Statistical Analysis

All statistical analyses were performed using R version 4.1.3 (R Core Team, 2022). R was also used to merge the separate datasets from each study into one unified dataset. Box–Cox transformations were applied to dependent variables in cases where assumptions for normality or homoscedasticity were violated.

Predictors of psychiatric symptoms were sought using a linear mixed model. This is an extension of standard linear models that allow for both fixed and random effects. Fixed effects are variables akin to explanatory variables (i.e., demographic factors) in a standard linear regression that are expected to have an effect on the response variable, which in our case refers to PTSD and depression scores. Random effects, on the other hand, are grouping factors that refer to inherent differences in the 12 individual studies that we control for, examples being culture and exposure to stressor severity. We, therefore, assumed that data from within each study would correlate more strongly than data between studies despite all the studies containing conflict journalists.

For the linear mixed models, Z-score standardization was applied to the IES-R and PCL-5 to allow for the evaluation of a combined, total trauma score for all studies. Figure 1 shows the distribution of z-scores across studies.

Five linear mixed models were then fitted to predict scores for total PTSD, intrusion, avoidance, hyperarousal, and depressive symptoms using the 12 studies as a grouping variable. All demographic variables were entered as fixed effects with the exception of years of experience which was excluded due to its strong correlation with age for both overall trauma (IES-R plus PCL-5: $r[805] = .85$, $p < .001$) and BDI-II scores ($r[706] = .86$, $p < .001$). Restricted Maximum Likelihood estimators were used to control for potential biases of Maximum Likelihood variance estimators. Optimizers were tuned using nloptwrap from the lme4 package.

One of our studies used the PCL-5 rather than the IES-R to determine symptoms of PTSD. The PCL-5 matches the DSM-5 criteria for PTSD whereas the IES-R is consonant with the DSM-IV definition, the latter thereby lacking the added DSM-5 criteria for negative alterations in mood and cognitions. To address the potential for this one study to confound our predictors of PTSD, we repeated our mixed linear model analysis in the 11 studies only that utilized the IES-R.

Results

Demographic Data

The mean age and work experience for journalists across studies were 39.12 ($SD = 9.58$; range = 20–80) and 14.64 ($SD = 9.13$; range = 0–50) years, respectively. Most journalists were male (66.27%), university educated (82.23%), and in a relationship (56.12%). See Table 2 for a detailed breakdown of demographic data per study.

Behavioral Data

The total mean score for the IES-R was 1.19 ($SD = .91$; range = 0–4). Subscale mean scores were 1.33 ($SD = 1.01$; range = 0–4) for intrusion, 1.14 ($SD = .92$; range = 0–3.88) for avoidance, and 1.08 ($SD = 1$; range = 0–4) for hyperarousal. For the PCL-5, means were 17.35 ($SD = 18.01$; range = 0–65) for total sum scores and 3.81 ($SD = 4.73$; range = 0–20), 1.95 ($SD = 2.32$; range = 0–8), 5.74 ($SD = 6.63$; range = 0–23), and 5.84 ($SD = 6.14$; range = 0–24) for the intrusion, avoidance, cognitions and mood, and hyperarousal subscales, respectively. The mean for the total BDI-II was 11.05 ($SD = 9.25$; range = 0–57). A breakdown of the psychometric scores according to symptom severity threshold for each of the 12 studies is shown in Table 3. While the overall mean scores for the IES-R and BDI-II scales were low according to designated thresholds, the percentage of journalists with moderate to severe symptoms of PTSD and depression varied across conflicts, ranging from 2.38% to 58.1% and 6.25% to 33.33%, respectively.

There were significant correlations between the total BDI-II score and scores on the total IES-R ($r = .54$, $p < .001$) as well as the intrusion ($r = .47$, $p < .001$), avoidance ($r = .48$, $p < .001$), and hyperarousal ($r = .57$, $p < .001$) subscales. Correlations for the total BDI-II and total PCL-5 ($r = .74$, $p < .001$) as well as the intrusion ($r = .60$, $p < .001$), avoidance ($r = .58$, $p < .001$), hyperarousal ($r = .72$, $p < .001$), and mood/cognitions ($r = .73$, $p < .001$) subscales were also significant.

The results of the regression analyses appear in Table 4. Being female emerged as a significant predictor for elevated scores on all psychiatric measures. The effect of having undergone mental health therapy for personal *and* trauma-related reasons significantly predicted all trauma and depression measures. Having received trauma-related therapy only was a significant predictor for higher scores on all psychiatric measures except for avoidance. Lastly, being in a relationship emerged as a significant, negative (i.e., protective) predictor for symptoms of depression.

The reanalysis of the PTSD data confined to the 11 studies with the IES-R data confirmed these findings with respect to sex and a past history of therapy for trauma and personal-related problems. Having only received trauma-based therapy in the past no longer predicted intrusive PTSD symptoms.

Discussion

We present frontline journalist data relating to symptoms of PTSD and depression collected over a 22 year period encompassing 12 conflict situations from widely dispersed geographical regions, namely the Middle East, Europe, Africa, and North America. Using a linear mixed model approach to the analysis, we identified

Figure 1
Distribution of Z-Scores Across Studies
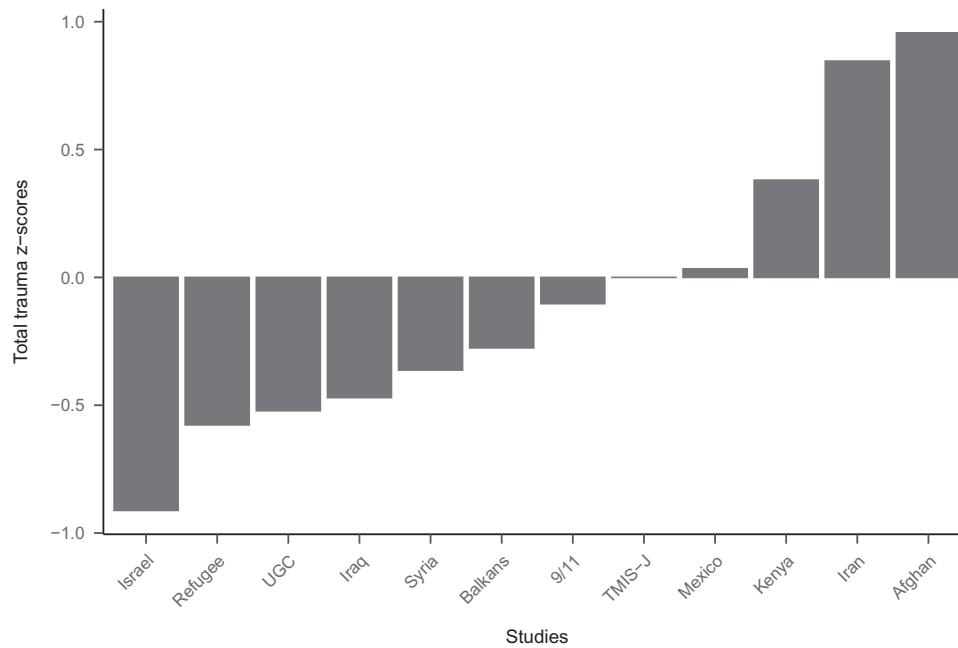
three factors common to all the studies that predicted psychiatric symptoms. These included being female and single and having a past history of psychiatric difficulties for which treatment was given. These three predictors hold true irrespective of between-study differences in language, culture, symptom severity scores, and exposure to traumatic stressors.

Our choice of data analysis, namely a mixed model linear regression, was based on the need to accommodate the varied nature of our sample composition. While conflict journalism was a common denominator linking all the participants, their differences at times transcended language to include cultural factors, the nature of the stressor, and the intensity, frequency, and duration of exposure to traumatic events. What our statistical analysis, therefore, allowed us to do when faced with this variability across the 12 individual studies, was to extract variables predictive of PTSD and depressive symptoms relevant not only to each stand-alone study but also to the collective sample. The fact that these common predictors emerged from a data set comprising more than 1,000 journalists collected over 20 years of research from an array of different frontline situations consolidates their validity. The three risk factors for symptoms of PTSD and depression, namely being female (Hu et al., 2017; Salk et al., 2017), not in a relationship (Freedman et al., 2015; Teo et al., 2013) and previous mental health difficulties (Ozer et al., 2003) have been identified previously in the general psychiatry literature. However, what is new in our data is the finding that each of these factors is applicable across an array of conflicts, cultures, and geography in frontline journalists.

Our failure to find evidence supporting age and education as predictors of PTSD and depressives symptoms was likely due to the composition and nature of our sample. To begin with, data linking younger age to the likelihood of developing PTSD in response to a stressor is a relatively weak finding in the trauma literature

(Brewin et al., 2000). Furthermore, in our study, younger age correlated strongly with duration of time worked as a journalist and by extension, time exposed to the stress of conflict. This in theory would work against younger age placing participants at increased risk for trauma-related problems. As for education, our sample composition was so heavily skewed toward university-educated participants there was little variance when it came to exploring this variable as a predictor.

The clinical relevance of the identified predictors s underscored by a closer look at the data. While the mean IES-R subscale and BDI-II scores were modest, group differences obscured a subset of journalists with more marked psychopathology. Moreover, in keeping with he broader trauma literature, significant correlations were found between symptoms of PTSD and depression (Rytwinski et al., 2013). This point is of considerable clinical relevance as the influence of concurrent depression on PTSD outcomes reveals smaller treatment effects (Kline et al., 2021). While our collective data were not geared toward establishing causality, it is nevertheless reasonable to conclude that war, conflict, and vicarious exposure to graphic violence come with adverse psychological consequences for some journalists, particularly for those with the risk factors identified here.

The results of our study confirm and extend what we know about the emotional health of frontline journalists. News organizations, which are moving belatedly to address the challenges posed by emotional distress in a subgroup of journalists, can now appreciate that there is a commonality to this distress and the factors that predict it. In addition, the presence of comorbid PTSD and depressive symptoms is another shared burden highlighting the potential challenges that treatment will pose. While our study did not examine real-world outcomes associated with trauma-related psychopathology, there is a robust general trauma literature that speaks to poor outcomes across

Table 2
Demographic Data by Study

	Balkans	9/11	Iraq	Mexico	Israel	UGC	Syria	Kenya	Iran	Refugees	Afghan	TMIS-J
n	140	46	84	104	38	117	59	57	114	80	105	159
Age	39.23 (6.28)	37.98 (5.55)	37.68 (7.07)	42.46 (10.24)	37.53 (6.9)	41.93 (9.13)	35.78 (9.13)	30.18 (5.19)	37.77 (7.3)	42.95 (8.45)	31.63 (8.16)	44.72 (12.08)
Years experience	15 (6.8)	14.7 (6.12)	13.7 (6.9)	14.9 (7.2)	13 (5.12)	16.14 (9.15)	10.15 (8.94)	5.82 (4.0)	14.84 (5.8)	18.27 (8.09)	9.72 (6.02)	20.54 (11.7)
Gender												
Male	110 (79%)	26 (57%)	66 (79%)	70 (67%)	30 (79%)	70 (60%)	34 (58%)	43 (75%)	65 (57%)	47 (59%)	87 (83%)	83 (52%)
Female	30 (21%)	20 (43%)	18 (21%)	34 (33%)	8 (21%)	46 (39%)	25 (42%)	14 (25%)	49 (43%)	33 (41%)	18 (17%)	75 (47%)
Education												
High school	20 (14%)	2 (4%)	4 (5%)	9 (9%)	8 (21%)	6 (5%)	—	*	1 (1%)	4 (5%)	10 (10%)	11 (7%)
College or University	116 (83%)	44 (96%)	80 (95%)	95 (91%)	30 (79%)	110 (94%)	—	*	112 (98%)	76 (95%)	95 (90%)	147 (92%)
Relationship status												
Divorced, separated or widowed	76 (54%)	17 (37%)	45 (54%)	48 (46%)	15 (39%)	55 (47%)	45 (76%)	32 (56%)	49 (43%)	33 (41%)	26 (25%)	40 (25%)
Married or in a relationship	64 (46%)	29 (63%)	39 (46%)	56 (54%)	23 (61%)	61 (52%)	14 (24%)	25 (44%)	64 (56%)	47 (59%)	79 (75%)	118 (74%)

Note. — = Data not collected; * = Mean years of education was 14.95 (*SD* = 4.41); UGC = Effects of exposure to uncensored user-generated content; Afghan = Afghanistan; TMIS-J = Toronto Moral Injury Scale for Journalists, that is, moral injury project.

multiple domains that accompanies failure to treat (Ellis & Zaretsky, 2018; Murphy & Busuttil, 2015). There is no reason to suppose the situation would be any different with journalists.

Given that our results are strengthened by the diversity in our sample, some additional comment is needed on the methodology we followed. Our approach to detecting psychiatric symptoms of PTSD and depression followed the descriptive phenomenology of the DSM-IV (Frances et al., 1994) and DSM-5 (American Psychiatric Association, 2013). Here one has to tread carefully in the context of data collected from non-Western societies given cultural nuances in psychopathology. However, there is a robust literature that supports our approach. The best examples of this are the World Health Organization (WHO) World Mental Health Surveys, which contain components dedicated to PTSD (Haro et al., 2006; Heeringa et al., 2008; Kessler et al., 2017) and major depression (Karam et al., 2014). Twenty countries, divided into low-, middle-, and high-income categories, were included. A formal structured interview, the Composite International Diagnostic Interview (CIDI) was used, which in the case of PTSD adhered exactly to the 17 DSM-IV criteria for PTSD and the nine criteria for major depression. All assessments were conducted face to face and generated 12-month prevalence rates which varied, as expected, across the countries surveyed.

Our approach to eliciting symptoms differed in one important aspect from the WHO surveys, for logistical reasons. In a number of our individual studies, journalists were approached while working in zones of conflict. Safety concerns thereby ruled out in person interviews like the CIDI. However, as with the WHO approach, we ensured studies were undertaken in the first language of participants (the exception being Israel where all participants were fully bilingual in Hebrew and English) with all research material translated and back translated as needed. Moreover, our choice of self-report psychiatric measures, namely the IES-R and BDI-II, was determined by two important considerations. First, these scales elicit an array of symptoms aligned with DSM criteria and second, they have been widely used in multiple languages across different research settings (Mignote, 2018; Weiss, 2007). In this regard, studies validating the Spanish and Farsi versions of the IES-R (Spanish: Baguena et al., 2001; Farsi: Panaghi & Mogadam, 2006) and the Spanish version of the BDI-II (Wiebe & Penley, 2005) had been published before our data collection, thereby guiding our efforts and enhancing the validity of the data collected.

Our study has certain limitations that reflect the logistical challenges of collecting behavioral data from journalists working in some of the world's most dangerous places. We have learned from experience that we tread a fine line between collecting sufficient, useful data without overloading the journalists with too many questionnaires. The latter has invariably resulted in journalists either not taking part in the study or leaving before completing the study. As noted previously, there were no structured interviews which meant we could not diagnose PTSD and major depression. To a degree, this is offset by data showing a strong correlation between the diagnoses of PTSD and major depression and symptoms recorded on psychometric measures like the IES-R and BDI-II (Mignote, 2018; Morina et al., 2013). In addition, our dataset lacked a number of variables that may also be key predictors of PTSD, namely the nature, frequency, and intensity of exposure to traumatic events. Data like these can be particularly difficult to obtain from journalists who cover war given the frequency

Table 3
Percentage Distribution of Psychiatric Data Thresholds by Study

	Balkans	9/11	Iraq	Mexico	Israel	UGC	Syria	Kenya	Iran	Refugee	Afghan	TMIS-J
						IES-R						
None	10 (7%)	0 (0%)	7 (8%)	9 (9%)	3 (13%)	12 (10%)	3 (5%)	4 (7%)	2 (2%)	8 (10%)	2 (2%)	—
Mild	68 (49%)	23 (50%)	44 (52%)	39 (38%)	18 (78%)	70 (60%)	32 (54%)	8 (14%)	9 (8%)	45 (56%)	8 (8%)	—
Moderate	43 (31%)	17 (37%)	27 (32%)	35 (34%)	2 (9%)	21 (18%)	15 (25%)	24 (42%)	46 (40%)	15 (19%)	34 (32%)	—
Moderately severe	17 (12%)	5 (11%)	2 (2%)	14 (13%)	0 (0%)	8 (7%)	3 (5%)	14 (25%)	46 (40%)	3 (4%)	50 (48%)	—
Severe	1 (1%)	1 (2%)	0 (0%)	7 (7%)	0 (0%)	0 (0%)	1 (2%)	2 (4%)	11 (10%)	0 (0%)	11 (10%)	—
						PCL-5						
Not provisional*	—	—	—	—	—	—	—	—	—	—	—	130 (82%)
Provisional*	—	—	—	—	—	—	—	—	—	—	—	29 (18%)
						BDI-II						
Minimal	102 (73%)	37 (80%)	67 (80%)	52 (50%)	—	82 (70%)	42 (71%)	38 (67%)	57 (50%)	69 (86%)	—	100 (63%)
Mild	24 (17%)	6 (13%)	11 (13%)	27 (26%)	—	16 (14%)	8 (14%)	13 (23%)	19 (17%)	6 (8%)	—	28 (18%)
Moderate	10 (7%)	1 (2%)	5 (6%)	17 (16%)	—	16 (14%)	7 (12%)	6 (11%)	20 (18%)	4 (5%)	—	15 (9%)
Severe	4 (3%)	2 (4%)	1 (1%)	8 (8%)	—	3 (3%)	2 (3%)	0 (0%)	18 (16%)	1 (1%)	—	16 (10%)

Note. — = Data not collected; * = Provisional diagnosis according to PCL-5 criteria; UGC = Effects of exposure to uncensored user-generated content; Afghan = Afghanistan; TMIS-J = Toronto Moral Injury Scale for Journalists, that is, moral injury project; IES-R = Revised Impact of Events Scale; PCL-5 = PTSD Checklist for DSM-5; BDI-II = Beck Depression Inventory-Revised.

with which they are exposed to life-threatening events. Arriving at an accurate number of events becomes even more problematic in journalists with long careers covering conflict, such as in the sample presented here. The same holds true for domestic journalists undertaking extremely hazardous work in countries like Iran and Mexico. Nevertheless, quantifying the number of traumatic events is important, for this variable is an important predictor of PTSD (Gould et al., 2021). This suggests there will be other predictors of PTSD and depression in frontline journalists that we failed to detect given the limited range of our variables.

In summary, we were able to identify three predictors of symptoms of PTSD and depression that are common to journalists covering conflict-related stories, irrespective of their language, culture, and the nature of the trauma exposed to. Being female, single, and having a past history of psychiatric difficulties identify those journalists at particular risk in a profession that is inherently risky to begin with. While we have no data showing that PTSD and depression can be prevented in journalists, understanding risk factors may lead to earlier detection of problems and from that earlier treatment. This in turn holds out the promise of a better outcome (Kearns et al., 2012). News organizations that have a moral obligation to care for those they send into harm's way to get the story should take note of these risk factors as they work toward keeping their journalists emotionally well.

Table 4
Linear Mixed Model Regression Results

	Dependent variables				
Predictor variables	Total PTSD scores	PTSD-intrusion	PTSD-hyperarousal	PTSD-avoidance	BDI-II
Intercept	−.070 (.267)	−.181 (.263)	.011 (.263)	.018 (.259)	12.123 (2.231)***
	[−.596, .45]	[−.699, .33]	[−.505, .52]	[−.489, .52]	[7.822, 16.42]
Female	.223 (.073)**	.213 (.074)**	.187 (.074)*	.258 (.076)***	1.881 (.745)*
	[.080, .36]	[.068, .36]	[.042, .33]	[.110, .41]	[.430, 3.34]
Age	.000 (.004)	.003 (.004)	−.000 (.004)	−.004 (.004)	−.040 (.037)
	[−.007, .01]	[−.004, .01]	[−.008, .01]	[−.012, .00]	[−.112, .03]
College/University	−.124 (.116)	−.133 (.117)	−.166 (.116)	−.056 (.120)	−1.093 (1.234)
	[−.351, .10]	[−.362, .10]	[−.393, .06]	[−.291, .18]	[−3.508, 1.31]
Therapy: nontrauma	.066 (.087)	−.000 (.088)	.094 (.087)	.108 (.090)	2.742 (.879)**
	[−.104, .23]	[−.172, .17]	[−.077, .26]	[−.068, .28]	[1.030, 4.46]
Therapy: trauma	.299 (.097)**	.295 (.099)**	.389 (.098)***	.172 (.101)	2.902 (1.011)**
	[.109, .49]	[.102, .49]	[.197, .58]	[−.026, .37]	[.937, 4.89]
Therapy: both	.502 (.152)***	.346 (.154)*	.548 (.153)***	.541 (.158)***	7.961 (1.619)***
	[.206, .80]	[.046, .65]	[.249, .85]	[.234, .85]	[4.799, 11.10]
In relationship	−.036 (.069)	.004 (.070)	−.047 (.070)	.018 (.072)	−1.553 (.710)*
	[−.171, .10]	[−.132, .14]	[−.183, .09]	[−.122, .16]	[−2.942, −.17]
Observations	737	737	736	736	643
Log likelihood	−959.046	−969.589	−962.642	−984.498	−2,281.814
AIC	1,909.670	1,930.876	1,916.885	1,960.889	4,591.315
BIC	1,984.119	2,005.204	1,991.296	2,035.008	4,628.288

Note. Statistics: Beta (*SE*) (2.5, 97.5% confidence interval); Total PTSD scores = the summed total of scores on the Revised Impact of Events Scale or the PTSD Checklist for DSM-5; BDI-II = Beck Depression Inventory-Revised; AIC = Akaike Information Criterion; BIC = Bayesian Information Criterion.
*p < .05. **p < .01. ***p < .001.

References

A Culture of Safety Alliance (2022). *About ACOS*. Retrieved April 26, 2022, from https://www.acosalliance.org/about-acos

American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders (DSM-5)*.

Aoki, Y., Malcolm, E., Yamaguchi, S., Thornicroft, G., & Henderson, C. (2013). Mental illness among journalists: A systematic review. *International Journal of Social Psychiatry*, *59*(4), 377–390. https://doi.org/10.1177/0020764012437676

Baguena, M., Villaroya, E., Belena, A., Díaz, A., Roldán, C., & Reig, R. (2001). Psychometric properties of the Spanish version of the impact of event scale-revised (IES-R). *Analisis y Modificacion de Conducta*, *27*(114), 581–604.

Beck, A. T., Steer, R. A., & Brown, G. K. (1996). *Beck depression inventory (BDI-II)*. Pearson London.

Beliveau, P. J. H., Hagues, S.-K., Colman, I., & Zamorski, M. A. (2019). Are personnel with a past history of mental disorders disproportionately vulnerable to the effects of deployment-related trauma? A cross-sectional study of Canadian military personnel. *BMC Psychiatry*, *19*(1), Article 156. https://doi.org/10.1186/s12888-019-2146-z

Breslau, N., Chilcoat, H. D., Kessler, R., & Davis, G. C. (1999). Previous exposure to trauma and PTSD effects of subsequent trauma: Results from the Detroit Area Survey of Trauma. *American Journal of Psychiatry*, *156*(6), 902–907. https://doi.org/10.1176/ajp.156.6.902

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

Committee to Protect Journalists (2022). *Journalists killed since 1992*. https://cpj.org/data/killed/?status=Killed&motiveConfirmed%5B%5D=Confirmed&type%5B%5D=Journalist&start_year=1992&end_year=2022&group_by=year

Ellis, J., & Zaretsky, A. (2018). Assessment and management of posttraumatic stress disorder. *Continuum*, *24*(3), 873–892. https://doi.org/10.1212/CON.0000000000000610

Feinstein, A. (2003). *Dangerous lives: War and the men and women who report it*. Thomas Allen & Son.

Feinstein, A. (2012). Mexican Journalists: An investigation of their emotional health. *Journal of Traumatic Stress*, *25*(4), 480–483. https://doi.org/10.1002/jts.21715

Feinstein, A., Audet, B., & Waknine, E. (2014). Witnessing images of extreme violence: A psychological study of journalists in the newsroom. *JRSM Open*, *5*(8), Article 205427041453332. https://doi.org/10.1177/2054270414533323

Feinstein, A., Feinstein, S., Behari, M., & Pavisian, B. (2016). The psychological wellbeing of Iranian journalists: A descriptive study. *JRSM Open*, *7*(12), Article 2054270416675560. https://doi.org/10.1177/2054270416675560

Feinstein, A., & Nicolson, D. (2005). Embedded journalists in the Iraq war: Are they at greater psychological risk? *Journal of Traumatic Stress*, *18*(2), 129–132. https://doi.org/10.1002/jts.20020

Feinstein, A., Owen, J., & Blair, N. (2002). A hazardous profession: War, journalists, and psychopathology. *American Journal of Psychiatry*, *159*(9), 1570–1575. https://doi.org/10.1176/appi.ajp.159.9.1570

Feinstein, A., Pavisian, B., & Storm, H. (2018). Journalists covering the refugee and migration crisis are affected by moral injury not PTSD. *JRSM Open*, *9*(3), Article 2054270418759010. https://doi.org/10.1177/2054270418759010

Feinstein, A., & Starr, S. (2015). Civil war in Syria: The psychological effects on journalists. *Journal of Aggression, Conflict and Peace Research*, *7*(1), 57–64. https://doi.org/10.1108/JACPR-04-2014-0119

Feinstein, A., Wanga, J., & Owen, J. (2015). The psychological effects of reporting extreme violence: A study of (Kenyan) journalists. *Journal of the Royal Society of Medicine Open*, *6*(9), Article 205427041560282. https://doi.org/10.1177/2054270415602828

Frances, A., & Associates (1994). *Diagnostic and statistical manual of mental disorders: DSM-IV*. American Psychiatric Association.

Freedman, S. A., Gilad, M., Ankri, Y., Roziner, I., & Shalev, A. Y. (2015). Social relationship satisfaction and PTSD: Which is the chicken and which is the egg? *European Journal of Psychotraumatology*, *6*(1), Article 28864. https://doi.org/10.3402/ejpt.v6.28864

Gonzalez, J. (2014). *Risk and reporting: The dangers of freelance journalism in Syria*. Retrieved April 26, 2022, from https://mediashift.org/2014/04/risk-and-reporting-the-dangers-of-freelance-journalism-in-syria/

Gould, F., Harvey, P. D., Hodgins, G., Jones, M. T., Michopoulos, V., Maples-Keller, J., & Nemeroff, C. B. (2021). Prior trauma-related experiences predict the development of posttraumatic stress disorder after a new traumatic event. *Depression and Anxiety*, *38*(1), 40–47. https://doi.org/10.1002/da.23084

Griffin, B. J., Purcell, N., Burkman, K., Litz, B. T., Bryan, C. J., Schmitz, M., Villerme, C., Walsh, J., & Maguen, S. (2019). Moral injury: An integrative review. *Journal of Traumatic Stress*, *32*(3), 350–362. https://doi.org/10.1002/jts.22362

Haro, J. M., Arbabzadeh-Bouchez, S., Brugha, T. S., De Girolamo, G., Guyer, M. E., Jin, R., Lepine, J. P., Mazzi, F., Reneses, B., Vilagut, G., Sampson, N. A., & Kessler, R. C. (2006). Concordance of the composite international diagnostic interview version 3.0 (CIDI 3.0) with standardized clinical assessments in the WHO world mental health surveys. *International Journal of Methods in Psychiatric Research*, *15*(4), 167–180. https://doi.org/10.1002/mpr.196

Heeringa, S., Wells, J., Hubbard, F., Mneimneh, Z., Chiu, W., Sampson, N., & Berglund, P. (2008). Sample designs and sampling procedures. In R. D. Kessler & T. B. Ustun (Eds.), *The WHO World Mental Health Surveys: Global perspectives on the epidemiology of mental disorders* (pp. 14–32). Cambridge University Press.

Herrera-Escobar, J. P., Seshadri, A. J., Rivero, R., Toppo, A., Al Rafai, S., Scott, J., Havens, J. M., Velmahos, G., Kasotakis, G., Salim, A., Haider, A. H., & Nehra, D. (2019). Lower education and income predict worse long-term outcome after injury. *Journal of Trauma and Acute Care Surgery*, *87*(1), 104–110. https://doi.org/10.1097/TA.0000000000002329.

Hu, J., Feng, B., Zhu, Y., Wang, W., Xie, J., & Zheng, X. (2017). Gender differences in PTSD: Susceptibility and resilience. In A. Alvinius (Ed.), *Gender differences in different contexts* (pp. 21–42). InTech.

Karam, E. G., Friedman, M. J., Hill, E. D., Kessler, R. C., McLaughlin, K. A., Petukhova, M., Sampson, L., Shahly, V., Angermeyer, M. C., Bromet, E. J., de Girolamo, G., de Graaf, R., Demyttenaere, K., Ferry, F., Florescu, S. E., Haro, J. M., He, Y., Karam, A. N., Kawakami, N., … Koenen, K. C. (2014). Cumulative traumas and risk thresholds: 12-month PTSD in the world mental health (WMH) surveys. *Depression and Anxiety*, *31*(2), 130–142. https://doi.org/10.1002/da.22169

Kearns, M. C., Ressler, K. J., Zatzick, D., & Rothbaum, B. O. (2012). Early interventions for PTSD: A review. *Depression and Anxiety*, *29*(10), 833–842. https://doi.org/10.1002/da.21997

Kessler, R. C., Aguilar-Gaxiola, S., Alonso, J., Benjet, C., Bromet, E. J., Cardoso, G., Degenhardt, L., de Girolamo, G., Dinolova, R. V., Ferry, F., Florescu, S., Gureje, O., Haro, J. M., Huang, Y., Karam, E. G., Kawakami, N., Lee, S., Lepine, J. P., Levinson, D., … On behalf of the WHO World Mental Health Survey Collaborators (2017). Trauma and PTSD in the WHO world mental health surveys. *European Journal of Psychotraumatology*, *8*(sup5), Article 1353383. https://doi.org/10.1080/20008198.2017.1353383

Kline, A. C., Cooper, A. A., Rytwinski, N. K., & Feeny, N. C. (2021). The effect of concurrent depression on PTSD outcomes in trauma-focused psychotherapy: A meta-analysis of randomized controlled trials. *Journal of Behavior Therapy*, *52*(1), 250–266. https://doi.org/10.1016/j.beth.2020.04.015

Levaot, Y., Sinyor, M., & Feinstein, A. (2013). Trauma and psychological distress observed in journalists: A comparison of Israeli journalists and their western counterparts. *The Israel Journal of Psychiatry and Related Sciences*, *50*(2), 118–121.

Mignote, H. G. (2018). An analysis of Beck Depression Inventory 2nd Edition (BDI-II). *Global Journal of Endocrinological Metabolism*, *2*(3), https://doi.org/10.31031/GJEM.2018.02.000540

Morina, N., Ehring, T., & Priebe, S. (2013). Diagnostic utility of the impact of event scale–revised in two samples of survivors of war. *PLoS ONE*, *8*(12), Article e83916. https://doi.org/10.1371/journal.pone.0083916

Murphy, D., & Busuttil, W. (2015). PTSD, stigma and barriers to help-seeking within the UK armed forces. *Journal of the Royal Army Medical Corps*, *161*(4), 322–326. https://doi.org/10.1136/jramc-2014-000344

Osmann, J., Dvorkin, J., Inbar, Y., Page-Gould, E., & Feinstein, A. (2021). The emotional well-being of journalists exposed to traumatic events: A mapping review. *Media, War & Conflict*, *14*(4), 476–502. https://doi.org/10.1177/1750635219895998

Osmann, J., Inbar, Y., Page-Gould, E., Dvorkin, J., Walmsley, D., & Feinstein, A. (2022). Validation of the toronto moral injury scale for journalists. *Traumatology*. Advance online publication. https://doi.org/10.1037/trm0000409

Osmann, J., Khalvatgar, A. M., & Feinstein, A. (2020). Psychological distress in Afghan journalists: A descriptive study. *Journal of Aggression, Conflict and Peace Research*, *12*(3), 115–123. https://doi.org/10.1108/JACPR-02-2020-0473

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

Panaghi, L., & Mogadam, J. A. (2006). Persian Version validation in impact of event scale-revised. *Tehran University Medical Journal TUMS Publications*, *64*(3), 52–60. http://tumj.tums.ac.ir/article-1-974-en.html

R Core Team (2022). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing. https://www.R-project.org/

Rytwinski, N. K., Scur, M. D., Feeny, N. C., & Youngstrom, E. A. (2013). The co-occurrence of major depressive disorder among individuals with posttraumatic stress disorder: A meta-analysis. *Journal of Traumatic Stress*, *26*(3), 299–309. https://doi.org/10.1002/jts.21814

Salk, R. H., Hyde, J. S., & Abramson, L. Y. (2017). Gender differences in depression in representative national samples: Meta-analyses of diagnoses and symptoms. *Psychological Bulletin*, *143*(8), 783–822. https://doi.org/10.1037/bul0000102

Teo, A. R., Choi, H., & Valenstein, M. (2013). Social relationships and depression: Ten-year follow-up from a nationally representative study. *PLoS ONE*, *8*(4), Article e62396. https://doi.org/10.1371/journal.pone.0062396

Weathers, F. W., Litz, B. T., Keane, T. M., Palmieri, P. A., Marx, B. P., & Schnurr, P. P. (2013). *The PTSD checklist for DSM-5 (PCL-5)*. United States Department of Veterans Affairs. https://www.ptsd.va.gov

Weiss, D. S. (2007). The Impact of Event scale: Revised. In J. Wilson & C. S. Tang (Eds.), *Cross-cultural assessment of psychological trauma and PTSD* (pp. 219–238). Springer. https://doi.org/10.1007/978-0-387-70990-1_10

Wiebe, J. S., & Penley, J. A. (2005). A psychometric comparison of the beck depression inventory-II in English and Spanish. *Psychological Assessment*, *17*(4), 481–485. https://doi.org/10.1037/1040-3590.17.4.481

Wikipedia contributors (2022). *List of ongoing armed conflicts—Wikipedia, the free encyclopedia*. https://en.wikipedia.org/wiki/List_of_ongoing_armed_conflicts