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RESEARCH ARTICLE

Associations among traumatic experiences, threat exposure, and mental health in Pakistani journalists

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Abstract

Pakistan is considered to be relatively unsafe for journalists; however, little is known about how working in situations that involve a high risk of trauma exposure and personal threat impacts journalists' mental health. The present study aimed to examine the associations among reporting on topics that carry a high risk of trauma exposure; work-related personal threat exposure; and symptoms of posttraumatic stress disorder (PTSD), depression, anxiety, and stress in a sample of Pakistani journalists. Participants completed online assessments to report the extent of their exposure to trauma and threat in the last 6 months with regard to reporting on militancy, crime, bomb blasts, and natural disasters and exposure to electronic, verbal, and physical threats; stalking; kidnapping; and detention. Further, we assessed symptoms of PTSD, depression, anxiety, and stress using self-report instruments. Of the 296 participants, 34.1% showed clinically significant levels of PTSD, moderately elevated levels of depression, and severely elevated levels of anxiety. Linear regression analyses demonstrated an association between PTSD symptoms and a higher frequency of reporting on natural disasters, $\beta = 2.40$, $p = .004$, whereas symptoms of anxiety, depression, and stress were associated with a lower frequency of reporting on bomb and suicide blasts, βs = -.93 – 1.61, p = <.001 – .047. Ideally, these findings will raise awareness about their situation, inform prevention and intervention efforts dedicated to journalists' mental health, and promote future research to elucidate the causal factors implicated in mental health symptoms in this population.

Journalists are frequently sent to cover crime, accidents, and disasters. Although coverage of these subjects is considered part of a journalist's regular job, it comes with considerable risks. First, exposure to such events may lead to psychological distress and mental health problems. Research has demonstrated that the lifetime prevalence of posttraumatic stress disorder (PTSD) in journalists is elevated compared to the rate found in the general population (Aoki et al., 2013; Feinstein & Owen, 2002; Pyevich et al., 2003). Across several studies, the reported prevalence of PTSD among journalists has ranged from 6.6% to 28.6% (Aoki et al., 2013). Several previous studies have explored depression among journalists (Backholm & Bjorkqvist, 2012; Feinstein et al., 2002; Feinstein & Nicolson, 2005; Sinyor & Feinstein, 2012); however, only one of these studies examined the prevalence of lifetime depression, which

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was found to be 21.4% in United States–based war journalists, a rate higher than the rate found in the general population (Feinstein et al., 2002). Second, whereas decades ago, journalists were seen as neutral observers, they are now increasingly considered to be useful targets for intimidation, threats, and attacks (Cottle et al., 2016). For example, drug cartels have been shown to threaten Mexican journalists assigned to cover them significantly more often than they threaten journalists assigned to other topics, and half of the journalists covering the cartels reported knowing a colleague who had been killed by a cartel member (Feinstein, 2012). Lee et al. (2017) found that almost two thirds of Korean journalists they surveyed (63.4%) reported having been verbally abused or threatened while at the scene of an event they were covering. In a sample of newspaper journalists in the United States, Pyevich et al. (2003) found that 61.8% of participants had been threatened verbally, 6.1% had been injured, and 5.3% had been physically assaulted while covering a story. In Pakistan's Khyber-Pakthoonkhwa province, Shah et al. (2020) found that 59.3% of surveyed journalists indicated that they had been verbally threatened on the job (Shah et al., 2020).

Pakistan is one of the most dangerous countries for journalists (Reporters Sans Frontières, 2020a). The South Asian country has been marred with conflicts involving the military, political, religious, and extremist groups for decades. Pakistan ranks fifth on the Global Terrorism Index, right after Syria (Institute for Economics and Peace, 2019). On its eastern border, tensions have arisen with India, a country with whom Pakistan has fought during four wars in the last century. On its western border, the Afghan conflict has emboldened extremist groups, who have attacked several civilian targets, including schools, hospitals, and mosques. Nearly 30,000 civilians and security personnel have lost their lives (South Asia Terrorism Portal, 2019), and at the height of the conflict, close to 2,000,000 individuals were forced to flee their homes, many of whom have yet to rebuild their livelihoods (Internal Displacement Monitoring Centre, 2020). Kidnapping, shootings, muggings, torture, fires, and natural disasters are common occurrences (Khan et al., 2016). As journalists report on these and other events, they are increasingly coerced into silence (Reporters Sans Frontières, 2020b). Television and media signals giving airtime to opposition groups have been jammed (Kermani, 2019), and journalists who have covered topics deemed to be undesirable, such as militancy, have been harassed (Committee to Protect Journalists, 2018).

These events have had negative consequences for Pakistani journalists, and over the last 10 years, a significant number of Pakistani journalists have been murdered, killed, or have faced attempted murder, abductions, arrests, illegal detentions by official authorities, and physical assaults and verbal threats (Freedom Network, 2020). Indeed, Pakistan ranks high on the list of countries in which journalists are murdered with complete impunity (Committee to Protect Journalists, 2020c).

Certain reporting topics are known to carry a high risk of developing mental health problems, including PTSD, depression, and anxiety disorders, for the journalists assigned to cover them. South Korean journalists were shown to report higher levels of PTSD if they had covered fires, car accidents, and railroad accidents compared with reporters who had not (Lee et al., 2017). In the United States, newspaper journalists who covered events involving death or injury were found to be more likely to report PTSD symptoms than those who had not covered such events (Pyevich et al., 2003), and Mexican journalists covering the drug war were shown to report higher rates of PTSD symptoms than those who covered other news (Morales et al., 2012). In addition, Mexican journalists who stopped reporting on drug cartels because of intimidation showed higher levels of PTSD and depressive symptoms compared with their colleagues who continued covering the drug cartels despite being threatened (Feinstein, 2012). War correspondents have shown a tendency to report a higher prevalence of PTSD than their local news counterparts (Feinstein et al., 2002; Feinstein & Nicolson, 2005), and covering natural disasters has also been related to higher levels of psychopathology. Weidmann et al. (2008) found a higher prevalence of PTSD among foreign correspondents covering tsunamis than among local journalists covering less extreme situations. After covering Hurricane Harvey's devastating impact in 2017, 40% of a predominantly White female sample of reporters in the United States reported increased levels of depressive symptoms (Dworznik-Hoak, 2020). Furthermore, journalists working in the newsroom were shown to report higher levels of depression, intrusion, avoidance, and heightened arousal if their work involved extreme images (Feinstein et al., 2014). Longer journalism careers have also been shown to be related to higher levels of intrusion and avoidance symptoms (Simpson & Boggs, 1999).

Although most previously described studies focused on foreign journalists working abroad, journalists reporting from their own country and those reporting from other countries may differ with regard to the risks related to certain forms of psychopathology due to exposure to trauma or threat. In a study of Israeli journalists covering dangerous areas in their own country, Levaot et al (2013) found that participants had lower levels of PTSD but higher levels of depression and anxiety than their Western counterparts covering war in foreign countries. The researchers postulated that war correspondents may be confronted with higher levels of personal threat, leading to higher

levels of intrusion symptoms. Moreover, Israeli journalists working in their own community were closer to their social support networks, which may have mitigated their symptoms of PTSD. Furthermore, 71.1% of the Israeli journalists reported that they felt their mandatory military training had prepared them for conflict journalism. The still heightened levels of depression and anxiety found among these journalists may have been activated by the chronicity of the exposure to traumatic events as well as their personal involvement in the fate of the community on which they reported (Levaot et al., 2013). These findings suggest that "home-based" coverage may still lead to PTSD but may also somewhat mitigate its effects.

Although women and girls, in general, have a higher risk of developing trauma-related psychopathology, such as PTSD (Olff et al., 2007), several studies on journalists have found no correlation between gender and PTSD (Aoki et al., 2013; Sinyor & Feinstein, 2012). Sinyor and Feinstein (2012) suggested that the women in their sample of war correspondents represented a highly selected, resilient group.

Despite Pakistan's status as being a relatively dangerous country for journalists, very little is known about symptoms of common mental disorders (e.g., PTSD, depression, anxiety) in Pakistani journalists. In one recent study, researchers investigated exposure to work-related trauma, the prevalence of PTSD symptoms, and factors associated with PTSD in 216 journalists working in the Pakistani Khyber Pakhtunkhwa province (Shah et al., 2020). The findings demonstrated that participants were frequently exposed to trauma-inducing events, most often war, natural disasters, and murders, and often experienced psychological distress. Moreover, the authors showed that avoidant emotional coping and active emotional coping were the two coping styles that contributed significantly to participants' PTSD symptoms.

The current study aimed to explore whether reporting on potentially traumatic topics and work-related threat exposure were associated with PTSD, depression, anxiety, and stress in a sample of 505 Pakistani journalists. The reporting topics of interest were militancy, crime (excluding militancy), bomb or suicide blasts, and natural disasters. Threats were categorized as electronic threats, face-to-face threats, physical aggression, stalking, kidnapping, and detention by authorities. We also examined whether symptoms of PTSD, depression, anxiety, and stress were associated with age, gender, and career length. We hypothesized that a higher frequency of reporting on potentially traumatic topics, higher frequency of threat exposure, and a shorter career would be related to higher levels of PTSD, depression, anxiety, and stress. We did not formulate any hypotheses on effects related to gender, age, or career length.

METHOD

Participants

In total, 415 Pakistani journalists took part in the study between August 2016 and January 2017. Participants were considered to be a journalist if they were professionally engaged in collecting, recording, or presenting stories or parts of stories for media outlets (i.e., newspapers, television, radio, online media). This group included news anchors and camera operators. Although supporting media professionals, such as media van drivers and technical staff, can also be at heightened risk, such personnel were excluded from this study. Several avenues were used to invite and motivate Pakistani journalists to participate in the study, which was described as a way to create awareness about the importance of journalists' emotional well-being. Facebook and Twitter posts, personal invitations at press clubs and media organizations in Karachi and Islamabad, press releases, a press conference, media interviews, and YouTube videos were employed as recruitment techniques. We also set up a Facebook page for the study with this information. Interested participants could email or message the study team through Facebook, Twitter, or a phone number that had been dedicated to the study. An invitation was also emailed to journalists whose email addresses had been obtained through employers, press clubs, and journalists' organizations.

Of the 415 respondents, 296 were included in the study. The 296 included participants (93.9% male, 6.1% female) were between 21 and 77 years of age ($M = 35.76$ years, $SD = 7.80$) and came from all parts of the country (see Table 1). Their career lengths ranged from 0 to 52 years ($M = 11.41$ years, $SD = 7.89$) and worked in television ($n = 164$, 55.4%), print ($n = 171$, 57.8%), photojournalism ($n = 30$, 10.1%), radio ($n = 55$, 18.6%), and online media ($n = 71$, 24.0%). Nearly one third of the participants reported having had a colleague who was killed ($n = 98$; 33.1%).

Participants were excluded if they were missing data on more than 35 of 38 items for the dependent variables and more than eight out of 10 independent variables ($n = 119$ cases). Of participants who responded to the relevant item, included participants reported having been stalked during their careers significantly more often than those who were excluded (i.e., 56.4% vs. 39.6%), $t(326) = 2.2$, $p = .031$. Included and excluded groups did not significantly differ on any other variables.

Procedure

An online questionnaire, hosted by Qualtrics (Provo, UT), that was suitable for phone and computer was devised

TABLE 1 Descriptive statistics

Variable	*n*	%	*M*	*SD*
Female gender	16	6.1		
Age (years)			35.76	7.80
Career length *			11.41	7.89
Educational attainment				
Graduate or higher	224	90.0		
Undergraduate	25	10.0		
Completed degree in journalism	143	57.4		
Training received				
Interviewing traumatized people	81	31.4		
Working in a hostile or unsafe environment	125	48.3		
Recognizing and dealing with trauma in oneself	63	24.3		
Main source of income				
Journalism	141	67.5		
Other	24	11.5		
Equal from journalism and other	44	21.1		
Position				
Freelance	88	29.8		
Staff	207	70.2		
Working for foreign news media	73	24.7		
Medium				
Print	171	57.8		
Photo	30	10.1		
Television	164	55.4		
Radio	55	18.6		
Web	71	24.0		
Working location				
Desk	23	7.8		
Field	159	53.9		
Both desk and field	113	38.3		
Marital status				
Single	67	25.4		
Married	197	74.6		
Living arrangement				
Joint family	121	48.8		
Spouse, children	73	29.4		
Relative	3	1.2		
Hostel	19	7.7		
Independent	22	8.9		
Spouse only	10	3.3		
Residential area				
Balochistan	12	4.8		
Khyber-Pakhtoonkhwa	81	32.5		
FATA	37	14.9		
Punjab	76	30.5		
Sindh	26	10.4		
Other[a]	16	6.8		
Self-reported health				
Psychiatric condition	22	8.9		
Medical condition	42	17.1		
Both psychiatric and physical conditions	28	11.4		
If psychiatric condition, treatment				
Medication	18	36.7		
Therapy	2	4.1		
Both medication and therapy	11	22.4		
None	18	36.7		
Hospitalized	50	38.0		
Psychopathology questionnaires				
DASS Depression subscale			10.68	9.68
DASS Anxiety subscale			9.54	8.61
DASS Stress subscale			13.72	9.92
PCL-C			38.15	15.95

Note: DASS = Depression Anxiety Stress Scale; PCL-C = Posttraumatic stress disorder Check List–Civilian Version.

[a]Islamabad, capital city of Pakistan ($n = 12$), Punjab and Balochistan ($n = 1$), Pakistan-held Kashmir ($n = 2$).

with the help of expert interviews, literature, and journalist communities in Pakistan. The survey was distributed between August 1, 2016, and January 31, 2017. As described, Pakistani journalists were recruited via various channels and invited to fill out the survey. Each respondent was emailed a personalized link to the survey that included a randomized number, and their answers were saved in case they wanted to take a break or their internet was cut off during survey administration. Prior to participation, individuals were informed of the study goals and the

voluntary nature of the study. They were assured that all information would be stored securely, anonymously, and with appropriate privacy protection. Participants were also notified that no information supplied by participants would be shared with any other individual, group, or organization. If they provided informed consent, they were linked through to the survey. Participants were allowed to skip questions. Data anonymity was ensured by keeping the email addresses separately from the personalized randomized numbers. Ethics approval was obtained from the ethical committee of the National Institute of Psychology in Islamabad, Pakistan (IRB-NIP/QAU/16/30).

Measures

Descriptive measures

Basic demographic data in this cross-sectional study included age, gender, career length (years); educational attainment (undergraduate or graduate); additional journalistic and trauma training (yes or no); marital status; living arrangement; area of residence; type of employment (freelance *or* staff); psychiatric and medical condition; therapy, medication, or hospitalization for psychiatric conditions; and whether the participant had considered not participating.

Reporting topics and threat experiences

The frequency with which journalists covered four topics was assessed: militancy or facilitation to militancy; crime, excluding militancy; bomb and suicide blasts; and natural disasters. Participants selected from the following response options: "1 or 2 times," "3–5 times," or "6 times or more," using the last 6 months as a reference point. Participants were also asked if they had ever covered these topics during their career as a journalist.

The frequency of exposure to six types of threats was assessed with the question "During your whole career, have you experienced the following which you believed was because of your work as a journalist?" Threat items included electronic threats, such as phone calls or text messages; verbal face-to-face aggression; physical aggression; intimidation through someone following or stalking the journalist; kidnapping by criminals or militants; and detention by police or other state agencies. Response options and time frame were the same as the options for the reporting topics item.

PTSD

Symptoms of PTSD were assessed using the Posttraumatic stress disorder Checklist– Civilian Version (PCL-C; Lang & Stein, 2005). This 17-item self-report measure closely reflects the PTSD diagnostic criteria outlined in the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV*; American Psychiatric Association, 1994). Participants indicated how much they had been bothered by symptoms of reexperiencing, avoidance, and arousal related to trauma exposure, scoring items on a scale of 1 (*not at all*) to 5 (*extremely*). Possible total scores range from 17 to 85, and subscale scores range from 5–25 25 for the Reexperiencing and Arousal scales and 7–35 for the Avoidance scale. A cutoff total score of 44 or higher was used to indicate probable PTSD. This score has been validated in previous studies, with a reported sensitivity and specificity of .94 and .86, respectively, and diagnostic efficiency of .90 (Blanchard et al., 1996). The Urdu version of the PCL-C was translated by three bilingual experts (i.e., one journalist and two psychologists) through forward translation; participants were able to choose which version to use (i.e., English or Urdu). In the present study, Cronbach's alpha was .93 ($n = 152$) for the English version and .96 for the Urdu version ($n = 144$).

Depression, anxiety and, stress

Depression, anxiety, and stress were measured using the brief version of the Depression Anxiety Stress Scale (DASS; Lovibond & Lovibond, 1995), which contains 21 items. Respondents rated items on a scale of 0 (*did not apply to me at all*) to 3 (*applied to me very much, or most of the time*), with higher scores reflective of more severe symptoms. Scores were summed for each scale and multiplied by 2, with a total range of 0 to 42, as per instructions, so the severity ratings of the full questionnaire (42 questions) could be used. Participants could opt for the English version (Lovibond & Lovibond, 1995) or the validated Urdu version (Aslam & Kamal, 2017). In the present sample, Cronbach's alpha for the DASS total scale was .93 for both the English and Urdu versions, and alpha values for the Depression, Anxiety, And Stress subscales were .81, .83, and .84, respectively, for the English version ($n = 126$) and .86, .83 and .85, respectively, for the Urdu version ($n = 152$).

Data analysis

The results of Little's Missing Completely at Random (MCAR) test indicated that data for the independent (i.e., variable-level) and dependent (i.e., item-level) variables were not missing completely at random, $\chi^2(3{,}897, N = 296) = 4{,}227.23$, $p < .001$. Missingness increased for items that came later in the questionnaires; this finding corresponds with remarks from participants that the survey was too

long. Missing values were present in 48.6% of all cases, 7.5% of all values, and 98.0% of all variables, with a range of 0.0% to 23.0% per variable. An item asking reporters how often they had reported on natural disasters had the highest number of missing values. Multiple imputation (MI) was performed to create three multiply imputed datasets (Van Buuren, 2012). MI leads to analyses with smaller standard errors (i.e., higher accuracy) and less-biased estimates than other missing data techniques, such as listwise deletion (Van der Heijden et al., 2006). Imputation was performed on all variables used for linear multiple regression analysis, including the four reporting topic frequencies, six threat frequencies, age, gender, and career length. Incomplete variables were imputed under fully conditional specification using the default settings. Boundaries were set to equal to the range options provided by the instrument or within the bounds of the response for all variables except for variable age, which had a low boundary set to 18. The results of imputed datasets were pooled for the analyses as per Rubin's rules (Rubin, 1987). The problem of attrition was addressed by completing the regression analyses for both the multiply imputed dataset and the original dataset (i.e., completers only).

Correlations between variables were examined using Pearson correlations. Associations between independent variables and symptoms of PTSD, depression, anxiety, and stress were explored with a multiple regression model (i.e., model "enter"). The independent variables were age, gender, career length, reporting topic frequencies (i.e., four topics), and threat experience frequencies (i.e., six forms of threat). Variance inflation factors were below 2.4, which is well below the recommended 10.0, and tolerances were below .10 (Hair et al., 2014); thus, there was no evidence of multicollinearity.

The computation of the descriptive statistics and multiple imputation of missing values were performed using SPSS Statistics (Version 25; IBM Corp., 2017). Multiple linear regression analyses were performed using RStudio (Version 1.3.959; R Core Team, 2017). The following R package was used to obtain p values and standardized regression coefficients for the multiple regression analyses: *pool* (Version 0.1.4.3; Cheng &Borges, 2019). We considered p values less than .05 indicative of statistical significance.

Results

Reported trauma and threat exposure and mental health symptoms

The frequencies of potentially traumatic reporting experiences and threat events are shown in Table 2. Of participants, 176 reported on militancy (63.3%), 224 (80.3%) on crime, 219 (77.1%) on bomb and suicide blasts, and 253 (87.5%) on natural disasters at least once during their career. Furthermore, 98 participants (33.1%) personally knew a colleague who had been killed and believed the death to be related to their colleague's work. Working for foreign news media was significantly correlated with electronic threats, $r = .22$, $p < .001$, and detention by authorities, $r = .13$, $p = .033$. There were 44 participants (18.9%) who initially considered not participating in the study. Lack of time was the most frequently cited reason for survey hesitancy ($n = 11$, 3.7%); five participants cited that they felt participation would be a waste of time, as previous surveys did not lead to improvement (1.6%); two participants (0.6%) cited fears of getting in trouble for answering survey questions, without specifying the expected trouble; and two participants expressed concern that the survey questions would trigger unwanted emotions (0.6%).

An independent t test revealed that staffers and freelancers significantly differed in their reported frequencies of kidnapping, t(187) = 2.3, p = .025, such that no freelancers had ever been kidnapped. In addition, no female participants indicated they had been kidnapped or detained in relation to their work. Independent t tests revealed no significant differences between men and women or between staffers and freelancers with regard to reporting topics, threat experiences, or any psychopathology outcome.

A total of 34.1% ($n = 85$) of the sample scored at or above the cutoff score for probable PTSD on the PCL-C ($M = 38.15$, $SD = 15.95$). On average, participants reported moderate levels of depressive symptoms, with a mean DASS Depression score of 10.68 ($SD = 9.68$; Lovibond & Lovibond, 1995). Mean DASS Anxiety ($M = 9.54$, $SD = 8.61$) and Stress subscale scores ($M = 13.72$, $SD = 9.92$) were above the population mean and fell into the range of severe symptoms for each. PCL-C scores were significantly related to DASS Depression, $r = .76$, $p < .001$; Anxiety, $r = .76$, $p = < .001$; and Stress subscale scores, $r = .75$, $p < .001$.

Associations between reported trauma and threat exposure and mental health

The results of the regression analyses are reported in Table 3. In all, reporting more often on natural disasters was significantly related to higher PCL-C scores, $\beta = 2.40$, $p = .004$, as well as higher scores on the DASS Depression, $\beta = 2.21$, $p < .001$; Anxiety, $\beta = 2.60$, $p < .001$; and Stress subscales, $\beta = 1.82$, $p < .001$. Reporting more often on bomb and suicide blasts was significantly and negatively associated with scores on the DASS Depression, $\beta = -1.15$, $p = .013$; Anxiety, $\beta = -1.61$, $p < .001$; and Stress subscales,

TABLE 2 Frequencies of Pakistani journalists reporting on topics and receiving threats

Variable	0[a]		1–2[a]		3–5[a]		> 5[a]		>1[b]		Family[c]		Colleagues[d]	
Reporting topic	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
Militancy	152	55.7	26	9.5	36	13.2	59	21.6	176	63.3				
Crime	97	35.9	37	13.7	49	18.1	87	32.2	224	80.3				
Bomb/suicide blasts	126	46.0	66	24.1	39	14.2	43	15.7	219	77.1				
Natural disasters	107	46.9	74	32.5	26	11.4	21	9.2	253	87.5				
Threat frequency														
Electronic	166	58.7	74	26.1	28	9.9	15	5.3	188	65.3	62	21.8	170	57.4
Verbal face-to-face aggression	181	65.1	71	25.5	15	5.4	11	4.0	179	63.0	50	17.5	143	48.3
Physical aggression	239	88.8	25	9.3	5	1.9	0	0.0	73	26.6	16	5.7	117	39.5
Stalking	177	64.8	60	22.0	22	8.1	14	5.1	158	56.4	44	15.8		
Kidnapping	259	97.7	6	2.3	0	0.0	0	0.0	22	8.2	10	3.6		
Detention	246	91.1	21	7.8	2	0.7	1	0.4	64	23.2	22	7.9		

Note: [a]Threats in the last 6 months. [b]Threatened more than once during entire career as a journalist. [c]"Did any of your family members ever experience [type of threat], which you believe was because of your work as a media professional?" [d]"Do you personally know colleagues who have experienced [type of threat]?

β = -.93, p = .047. A higher frequency of being stalked was significantly related to higher PCL-C scores, β = 2.29, p = .004, as well as DASS Anxiety scores, β = 1.29, p = .002. More frequent experiences of kidnapping were significantly related to higher scores on the DASS Anxiety, β = 5.38, p = .035, and Stress subscales, β = 7.57, p = .010. A higher frequency of being threatened electronically was significantly associated with higher DASS Depression scores, β = 1.22, p = .012. Longer career length was significantly associated with more severe anxiety symptoms, β = .15, p = .012, and older age was significantly related to lower PCL-C scores, β = -.38, p < .001, as well as lower scores on the DASS Depression, β = -0.19, p = .014; Anxiety, β = -0.23, p < .001; and Stress subscales, β = -0.17, p = .009.

The regression models on the completer data were significant for the PCL-C, β = .06, $F(13,178) = 1.993$, p = .024, and anxiety, β = .09, $F(13, 184) = 2.421$, p = .005. The regression models on the completer data were non-significant for DASS depression, β = .02, $F(13,184) = 1.369$, p = .178, and stress, β = .03, $F(13,182) = 1.512$, p = .117. This seems to be the effect of many non-contributing predictors drowning out the effect of the significant ones. As can be seen in Table 3, the results of analyses obtained on imputed data generally corresponded to those on the original data. However, the p values tended to be lower and the standardized beta coefficients of the effect sizes higher for the imputed data.

DISCUSSION

In the present study, the vast majority of Pakistani journalists surveyed reported having covered militancy, crime, bomb and suicide blasts, and natural disasters as part of their jobs. Moreover, more than half of the sample had been threatened more than once electronically or in person or had been stalked. As expected, symptoms related to PTSD, depression, anxiety, and stress were considerably elevated in this population. Trauma and threat exposure were clearly related to mental health outcomes.

With respect to the role of reporting topics, journalists who covered natural disasters more frequently reported higher levels of PTSD, depression, and anxiety than those who did not. This is in line with our expectations as well as findings from previous studies on journalists (Weidmann et al., 2008). Also as expected, journalists exposed to stalking reported higher levels of PTSD and stress symptoms more often than their colleagues. Older journalists reported lower levels of all psychopathological outcomes compared with their younger counterparts (Aoki et al., 2013). However, longer career length was associated with higher levels of anxiety. It is possible that younger journalists who reported a longer career were more prone to developing anxiety than older journalists with a shorter career; however, we did not test the interaction between age and career length.

TABLE 3 Results of multiple regression analyses correlating with psychopathology

Independent variable	Original data		Imputed data ($n = 296$)	
	β	p	β	p
DASS Depression[a]				
Age	-.25	.014	-0.19	.014
Gender	.02	.817	-0.16	.892
Career length	.17	.109	0.05	.456
Militancy	-.05	.548	-0.32	.390
Crime	.02	.804	0.09	.785
Bomb/suicide blasts	-.08	.455	-1.15	.013
Natural disasters	.16	.131	2.21	< .001
Electronic threats	.12	.159	1.22	.012
Verbal face-to-face aggression	.04	.637	0.38	.486
Physical aggression	-.04	.640	-1.20	.238
Stalking	.05	.528	0.86	.070
Kidnapping	.09	.284	4.68	.109
Detention	.02	.789	-0.08	.938
DASS Anxiety[b]				
Age	-.27	.006	-0.23	< .001
Gender	.01	.843	-1.04	.408
Career length	.19	.053	0.15	.012
Militancy	-.01	.961	0.04	.909
Crime	.03	.705	0.21	.452
Bomb/suicide blasts	-.15	.148	-1.61	< .001
Natural disasters	.20	.042	2.60	< .001
Electronic threats	.04	.676	0.65	.126
Verbal face-to-face aggression	.09	.296	0.92	.054
Physical aggression	.01	.929	-0.19	.830
Stalking	.11	.162	1.29	.002
Kidnapping	.11	.168	5.38	.035
Detention	.08	.295	1.06	.233
DASS Stress[c]				
Age	-.09	.373	-0.17	.009
Gender	.03	.701	0.55	.700
Career length	.01	.963	0.10	.125
Militancy	.11	.912	0.16	.677
Crime	.07	.428	0.67	.038
Bomb/suicide blasts	-.09	.417	-0.93	.047
Natural disasters	.13	.211	1.82	< .001
Electronic threats	.07	.444	0.65	.182
Verbal face-to-face aggression	.07	.407	1.00	.070
Physical aggression	.06	.517	1.15	.257
Stalking	.03	.747	0.53	.261
Kidnapping	.13	.128	7.57	.010
Detention	.02	.843	-0.07	.946
PCL-C[d]				
Age	-.22	.029	-.38	< .001
Gender	-.04	.590	0.28	.906
Career length	.05	.601	0.11	.331
Militancy	-.03	.764	-.080	.892
Crime	.12	.145	0.88	.090
Bomb/suicide blasts	-.04	.723	-0.27	.722
Natural disasters	.14	.171	2.40	.004
Electronic threats	.07	.446	0.84	.293
Verbal face-to-face aggression	.01	.935	1.44	.109
Physical aggression	.03	.766	-0.86	.611
Stalking	.11	.189	2.29	.004
Kidnapping	-.06	.467	0.26	.956
Detention	.08	.329	2.45	.142

Note: DASS = Depression Anxiety Stress Scale; PCL-C = Posttraumatic stress disorder Check List – Civilian Version.

[a]For the model using completer data: $\beta = .02$, $F(13,184) = 1.369$, $p = .178$. [b]For the model using completer data: $\beta = .09$, $F(13, 184) = 2.421$, $p = .005$. [c]For the model using completer data: $\beta = .03$, $F(13,182) = 1.512$, $p = .117$. [d]For the model using completer data: $\beta = .06$, $F(13,178) = 1.993$, $p = .024$.

We expected but did not find higher levels of PTSD among journalists who were more frequently assigned to cover bomb and suicide blasts, crime, and militancy or those who faced electronic, verbal, or physical threats, including kidnapping. These results are anomalous, as the

literature suggests otherwise (Weidmann et al., 2008). In the case of infrequent experiences, such as kidnapping and detention, this may have been the result of limited statistical power. It is also possible that journalists suffering from more severe PTSD symptoms avoided taking part in the study. An unanticipated finding was that journalists who more often reported on bomb and suicide blasts reported lower levels of depression, anxiety, and stress. This may be the result of selection bias considering that in the existing literature, adverse events have been consistently related to higher levels of depression (Dworznik-Hoak, 2020; Feinstein et al., 2014), anxiety (Miloyan et al., 2018), and stress (Feinstein et al., 2014). Of note, significance tests performed on the imputed dataset were less conservative than those performed on the original dataset (i.e., complete cases only), which may have been caused by a lack of statistical power; bias, as our data were not MCAR; or both (Enders, 2010).

The estimated level of probable PTSD in the present sample (i.e., 34.1%) was high compared with most other self-report–based levels reported in journalist samples (Aoki et al., 2013) but lower than what was found in a sample of journalists from Pakistan's Khyber-Pakthoonkhwa province (48.6%; Shah et al., 2010). This province and its inhabitants, including journalists, have taken the brunt of terroristic attacks. Levels of depression, anxiety, and stress among journalists from Khyber-Pakthoonkhwa province were found to be considerably higher than the established DASS population mean (Lovibond & Lovibond, 1995). They were, however, in line with previous research on distressed populations in Pakistan (Khan et al., 2016; Naeem et al., 2012). The chronicity of the exposure to traumatic events as well as personal involvement may have heightened depression and anxiety in Pakistani journalists (Levaot et al., 2013). Another possible factor is a potentially wider range of stressors that Pakistani journalists may face as compared to other journalists, such as censorship, lack of social security, and economic hardship. In line with previous research, comorbidity between all psychopathological outcomes was high (Brady et al., 2000).

We did not find evidence for a contribution of gender to differences in psychopathology outcomes. One explanation may be that the limited number of only 18 female participants reduced the power to detect significant differences. However, this finding is in line with findings in studies on journalists (Aoki et al., 2013; Sinyor & Feinstein, 2012) but not with findings from more general trauma-exposed samples (see Olff et al., 2007). Female and male reporters in our sample did not differ significantly with regard to the topics they covered or psychopathological outcomes. Sinyor and Feinstein (2012) suggested that female war reporters are a highly selective, resilient group, who are fairly similar to their male counterparts but dissimilar to women in the general population. This is underscored by the fact that studies in other resilient professions, such as police officers and soldiers, have also failed to find gender differences regarding PTSD risk (Pole et al., 2001; Sutker et al., 1995). Considering conservative views on gender roles in Pakistan, Pakistani female reporters are also likely to be a particularly highly selective and resilient group.

The present study was one of the first to examine Pakistani journalists' mental health. It covered a range of threats and reporting experiences in relation to PTSD, depression, anxiety, and stress. Our findings were fairly similar to those reported in a recent, similar study performed in Pakistan's Khyber Pakthoonkhwa province, where the majority of participating journalists were also exposed to war-related violence and natural disasters and reported elevated levels of PTSD (Shah et al., 2020). Our results add to the existing literature on the associations between a wide range of threats and reporting experiences and various mental health symptoms as assessed in a nationwide sample of journalists. The present findings may raise awareness about the situation in which Pakistani journalists find themselves and compel their employers, government officials, and nongovernmental organizations to consider these individuals' well-being. The findings may also inform prevention and intervention efforts dedicated to Pakistani journalists' mental health, such as mental health awareness workshops and training for covering natural disasters. This is particularly salient for journalists who cover natural disasters and younger journalists who have had a relatively long career.

There are some study limitations that should be discussed. Most notable are the use of self-selected sampling, self-report measures, and a cross-sectional design. We are unsure whether our study sample is representative of the general population of Pakistani journalists due to the open recruitment procedure. In addition, there are no data available regarding the demographic characteristics of the estimated 20,000 journalists in Pakistan (Ashraf, 2018), precluding a comparison between our sample and the larger population of Pakistani journalists. Furthermore, we were not able to compensate participants and, therefore, relied on motivated individuals willing to be involved without compensation. Additionally, self-report assessments have been known to demonstrate lower validity compared with clinical assessments (Feinstein & Dolan, 1991). In conflict areas, these measures have been shown to overestimate levels of PTSD, depression, and anxiety by 1.5 to 2 times; some researchers have posited that this is because self-report instruments do not assess clinical significance or functional impairment (Charlson et al., 2019). However, the instruments used in the present study demonstrated good reliability in this sample. Finally, data were

collected approximately four years ago. In 2019, the number of terrorism-related incidents dropped to about one quarter of what occurred in 2016 (South Asia Terrorism Portal, 2020). Threats against journalists in Pakistan, however, have increased (Alecci, 2020; Reporters sans Frontieres, 2020b; Ellis-Petersen & Baloch, 2019; Gannon, 2018), and, thus, it is likely that the mental health impact of career-related trauma and threat exposure is still significant.

It is important for journalists and their employers to be made aware of psychological problems that can occur after covering a traumatic event. This will help individuals recognize these problems and seek help in time. Considering that a sizeable number of journalists in Pakistan work from remote areas, mobile technology could be considered to provide this information; it could also be used for mental health screening (e.g., Kuhn et al., 2018) and interventions for PTSD (Sijbrandij et al., 2016) and depression (Karyotaki et al., 2017), especially when no other options, such as face-to-face interventions, are available. Pakistan, as does any country, needs a healthy press corps to monitor the government and inform its citizens.

In addition to the quantitative data presented in this paper, qualitative data may enrich this area of research. Future studies might further examine the prevalence of psychiatric disorders among this population as assessed using clinical interviews, and random sampling would enable researchers to estimate the prevalence of psychopathology in Pakistani journalists. Moreover, only associations and not causal associations could be established from the present data; such analyses would require a longitudinal study design with assessments that occurred before individuals began working as a journalist. Finally, future studies could examine the effectiveness of interventions to prevent and ameliorate specific mental health problems among journalists.

OPEN PRACTICES STATEMENT

The study reported in this article was not formally preregistered. Neither the data nor the materials have been made available on a permanent third-party archive; requests for the data or materials should be sent via email to the lead author at suzannakoster@gmail.com .

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