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Psychological Reactions Following the November 2015 Paris Attacks: Perceiving the World as Unjust and Unsafe

To the Editor: On November 13, 2015, marauding gunmen and suicide bombers attacked the multicultural central district of Paris and its northern suburb St Denis, killing 130 people. The question arises whether, as often proclaimed in popular media, such an event has a potential to exert long-term psychological impact on the larger population.¹ We suggest that a mental health influence of terror on the population at large would emerge through changes in people's perceptions of a just versus unjust world, mortality salience, and concomitant sense of safety. The influence of these constructs on psychological distress and posttraumatic stress disorder (PTSD) symptoms following terror attacks are not often examined in the psychiatric literature.

Method. Four weeks after the November 2015 mass attacks (week of December 13, 2015), 2,612 participants were sent a web link to the survey; 1,878 of them passed a validation question and subsequently participated fully in the study (response rate = 72%). The sample was drawn from an existing panel using random stratified sampling methods and included respondents from across France, using weights for key demographic elements (age, gender) that were compared with French census information to create a reliable approximation of a representative sample (mean age = 41.1 years [SD = 10.8]; 54% women [n = 1,005]; 35.6% with a marital status of single [n = 668]). This online panel was used previously, after the Charlie Hebdo terror attack in Paris.^{2,3} The study was approved by the institutional review boards at Ariel University (Ariel, Israel) and Warwick University (Warwick, United Kingdom).

Perceptions of Unjust World were measured by the 5-item unjust world scale.⁴ Each item was rated on a scale with 1 = strongly disagree to 5 = strongly agree. The items are summed with higher score indicating greater belief in an unjust world ($\alpha = 0.75$). Mortality salience was measured by the following item: "To what extent have the recent attacks in Paris changed how you think about your own death?" (1 = a great deal less to 5 = a great deal more, with scores of ≥ 4 representing high mortality salience). Sense of safety was measured by item 8 from the WHO Quality

of Life-Brief Version⁵ (1 = not at all to 5 = extremely, with scores of ≥ 4 indicating high sense of safety).

Psychological distress was measured by the 6-item Kessler's K6,⁶ with scores of ≥ 13 signifying elevated psychological distress criterion ($\alpha = 0.91$). Endorsement of PTSD symptoms was measured by the proposed ICD-11 PTSD symptoms criteria. Each item was rated on a 5-point rating scale (1 = not at all to 5 = extremely). Each item that was answered with a score ≥ 3 represented a positive symptom rating. At least 1 symptom from each cluster must be positive for endorsement of PTSD (at least 3 symptoms).⁷

Results. The findings revealed that 10.2% (n = 191) of the sample met elevated psychological distress (K6 score ≥ 13), and 14.1% (n = 264) endorsed PTSD symptoms criteria. The 2-step logistic regressions (adjusted for demographics), measured by OR (95% confidence interval [CI]), showed that elevated psychological distress was significantly associated with higher perceptions of unjust world (1.19 [1.14–1.25]), higher mortality salience (2.46 [1.78–3.40]), and lower sense of safety (0.36 [0.23–0.56]) (Table 1). Similar results were found for the association of endorsed PTSD symptoms with higher perceptions of unjust world (1.16 [1.11–1.20]), higher mortality salience (2.65 [2.00–3.52]), and lower sense of safety (0.34 [0.23–0.49]). Both models were found to be significant using the omnibus test for psychological distress ($\chi^2_6 = 219.621, P < .0001$) and for endorsement of PTSD symptoms ($\chi^2_6 = 165.197, P < .0001$).

Following the November 2015 terror attacks in Paris, French people who perceived the world as unjust, thought more about their own mortality, and felt less personal safety were more likely to exhibit poorer mental health. These results build onto previous studies documenting the importance of changes in psychological beliefs following terrorist attacks.⁸

The study's limitations are the use of cross-sectional design and lack of previous measurement of mental health, which precluded examination of causality, as well as possible web-based response bias.

Clinicians should be cognizant that after terror attacks, their clients' perceptions of the world as being unjust and having higher awareness of mortality and lower sense of safety may take a toll on their mental health.

Table 1. Psychological Reactions Associated With Psychological Distress and PTSD Symptoms Following the November 2015 Paris Terror Attacks (N = 1,878)

	Mean	SD	n	%	Elevated Psychological Distress		Endorsed PTSD Symptoms	
					Odds Ratio	95% CI	Odds Ratio	95% CI
Step 1								
Age (years)	41.1	10.8			0.99	0.98–1.01	0.99	0.98–1.00
Female			1,005	53.5	1.74***	1.27–2.38	1.12	0.86–1.45
Currently single			668	35.6	1.04	0.76–1.43	1.26	0.95–1.67
Step 2								
Age (years)					1.00	0.98–1.01	1.00	0.98–1.01
Female					1.55**	1.11–2.15	0.95	0.72–1.25
Currently single					1.09	0.78–1.52	1.34	0.99–1.81
Unjust world perceptions	14.9	3.6			1.19***	1.14–1.25	1.16***	1.11–1.20
Mortality salience			482	25.7	2.46***	1.78–3.40	2.65***	2.00–3.52
Sense of safety			673	35.8	0.36***	0.23–0.56	0.34***	0.23–0.49

**P < .01.

***P < .001.

Abbreviation: PTSD = posttraumatic stress disorder.

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REFERENCES

1. Reguly E. Paris attacks: will the attacks change France? The Globe and Mail Web site. <http://www.theglobeandmail.com/news/world/will-the-attacks-change-france/article27267152>. November 15, 2015.
2. Ben-Ezra M, Leshem E, Goodwin R. In the wake of national trauma: psychological reactions following the Charlie Hebdo terror attack. *Am J Psychiatry*. 2015;172(8):795–796.
3. Goodwin R, Leshem E, Ben-Ezra M. Psychological distress, interpersonal closeness and discrimination following the Charlie Hebdo attacks. *Psychother Psychosom*. 2016;85(3):190–191.
4. Lench HC, Chang ES. Belief in an unjust world: when beliefs in a just world fail. *J Pers Assess*. 2007;89(2):126–135.
5. Skevington SM, Lotfy M, O'Connell KA; WHOQOL Group. The World Health Organization's WHOQOL-BREF quality of life assessment: psychometric properties and results of the international field trial: a report from the WHOQOL group. *Qual Life Res*. 2004;13(2):299–310.
6. Kessler RC, Barker PR, Colpe LJ, et al. Screening for serious mental illness in the general population. *Arch Gen Psychiatry*. 2003;60(2):184–189.
7. Cloitre M, Garvert DW, Brewin CR, et al. Evidence for proposed ICD-11 PTSD and complex PTSD: a latent profile analysis. *Eur J Psychotraumatol*. 2013;4:20706.
8. Kaiser CR, Vick SB, Major B. A prospective investigation of the

relationship between just-world beliefs and the desire for revenge after September 11, 2001. *Psychol Sci*. 2004;15(7):503–506.

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