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Short report: Psychological distress, interpersonal closeness and discrimination following the Charlie Hebdo attacks.

Authors: Robin Goodwin[1], Elazar Leshem[2], Menachem Ben-Ezra[2]

[1] Department of Psychology, Warwick University, Coventry, United Kingdom

[2] School of Social Work, Ariel University, Ariel, Israel

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Hebdo attacks.

Terrorist attacks in January 2015 in Paris on the satirical magazine Charlie Hebdo, and related

incidents on subsequent days, left 17 dead and 22 injured. Reported as 'the French 9/11' these were

portrayed by some as leading to national trauma across the country (1). Widespread indirect

exposure via media coverage can amplify psychological distress and promote emotional responses

well away from the 'bulls-eye' of any event, with media exposure following terrorist attacks more

strongly associated with PTSD than direct exposure (2). Switching between multiple media outlets

may be particularly taxing (3), as individuals are exposed to both traditional media and graphic

content through social media. Shared social stresses may subsequently impact on personal

relationships with close others, as well as members of potential out-groups. Terror management

theories (4) suggest we seek intimacy and support from others to cope with personal threats. This

then reduces existential distress by validating self-esteem and personal beliefs. In contrast, mortality

threats can lead to the rejection of others who threaten or undermine our world views, leading to

scapegoating and stigmatisation (5). We report data from a national survey exploring the association

between media use, psychological distress, relational intimacy, and willingness to interact with

Muslims four weeks after the attacks.

An online panel survey across France (week of 8th February 2015) used random stratified

sampling methods to weight key demographics (6). We used an existing panel data base, with

participants selected to match the French census for age and sex. Ethical approval was obtained

from the Ariel University School of Social Work Ethics Committee. The sample included respondents

from across France, with oversampling from Paris. Of 6059 sent a web-link, 2421 clicked through to

the survey of which 1981 (82%) passed a validation question and responded fully. The final sample

included 1033 women (52%), M age 41.2 (SD 10.95), with one-third of participants (667) from Paris.

Demographic questions indicated sex, age, location (Paris or not) and religiosity on the standardised

five-item Duke religiosity scale (7, α = .89). Six items assessed number of sources used to learn about

the attacks from traditional media (TV, radio, newspapers) or social media (Facebook, Twitter,

YouTube). For each of the six items, respondents indicated whether or not that media was the main

source of information about the Charlie Hebdo attacks (yes or no): scores were then summed

separately to form indices for traditional media and social media. Psychological distress was

measured using the Kessler K6 (8), a widely used six-item measure of non-specific distress (5 points,

from *none of the time* to *all of the time* (α = .91). Questions were specifically framed in terms of

"how often you have felt this since the attacks" (a period of approximately 30 days). Scores of >18

were used to indicate several risk of mental illness (SMI). Because previous studies have indicated

that a substantial proportion of those who report SMI at baseline may progress to suicidal ideation

(8) we differentiate between SMI and those at lower risk. Two items were combined to assess

relationship change ("to what extent have the recent Paris attacks changed your relationship with

your friends (family))" (5 points, from *made it much more distant* to *made it much closer* (r (2 items)

= .26 p<.001)). Willingness to interact with Muslims was measured using a modified Social Distance

scale, indicating willingness to interact with six others (as occasional contact, business partner, home

guest, close friend, boy/girlfriend, marital partner) (5-point scale from *not at all* to *very much*) (9).

Linear regressions examined association between number of media sources and

psychological distress, controlling for age, sex, religiosity and location. Regressions explored

associations between age, sex, religiosity, location, psychological distress and changes in relationship

with friends / family [N=1982], and willingness to contact Muslims by non-Muslims [N=1925]. T-tests

contrasted those at SMI with participants at less risk on closeness to family/friends and engagement

with Muslims. In terror management theory, the seeking of close others, and rejection of those

outside the group, is greatest amongst those who are most distressed. We assess the mediating

effect of psychological distress on the association between multiple media use and social contacts,

using bootstrapping on 10,000 samples and 90% Monte Carlo confidence intervals.

Sex, religiosity, and both traditional media and social media use were all significantly associated with greater psychological distress (Table 1), with female respondents, religious participants, and those who used multiple traditional or social media more distressed. Greater distress, religiosity, and the use of both traditional and social media sources, were associated with increased contact with friends and family, while lower distress, younger age and residence in Paris were associated with willingness to interact with Muslims. Eight percent of respondents (N=158) were classified as at SMI; these respondents reported increased closeness family and friends (Ms 3.06 vs. 3.21, t (1981) = -4.60, p<.001), and less willingness to engage with non-Muslims (Ms 3.42 vs. 3.18, t (1924) = 2.24, p<.03). Psychological distress mediated the relationship between media use and changes in relationships among family and friends (β = .0025; 95%CI (.0011-.0040), p<.05).

Findings have a number of implications. Consistent with previous studies, indirect exposure of a trauma, via use of multiple media sources, was positively associated with greater distress, with this media effect exceeding that of location (2). This is likely to be of increased significance as individuals gather news from an increasingly wide range of sources. Unlike previous findings following a natural disaster, which prioritised the impact of social media (10), our results imply both traditional and social media are important for responses to terrorism. Previous analyses of cumulative exposure to collective trauma suggest responses to future community trauma may be further compounded by indirect exposure to the Charlie attacks, leading to an increased toll on well-being. Such sensitisation may be particularly notable if trauma is of a similar nature (i.e. a terror attack) (2).

In line with other work following terrorist attacks, and regardless of location, respondents reported they felt greater closeness towards friends and family after the attacks, highlighting the significance of intimate support during shared stress. In our data psychological distress partially explained this association. As in previous studies those who were distressed were less willing to interact with those associated with an apparently threatening group (in this study Muslims). This emphasises the risks of stigmatization and behavioural distancing following terrorist attacks.

Community based psychologists and therapists may need to provide extra support to some groups following trauma.

The present study was cross-sectional and collected data retrospectively four weeks following the attacks. Future research might incorporate longitudinal designs better able to probe potential causal relations between psychological distress and media use, larger samples, and explore moderators of relationship response to threat, such as culture and attachment style. Future work might also include length of each media exposure (media dosage) to estimate relative cumulative impact of each source as well as to allow for the impact of social media content linked to traditional media. Further work could also consider the impact of prior exposure to trauma on media consumption and psychological distress. Finally data was collected shortly after a trauma; future work could consider sustained psychological distress over time, and its potential influence on interpersonal relations.

1193 words

Table 1: Factors associated with psychological distress and social contacts following the Charlie Hebdo attacks

	Psychological distress (K6) (N=1982)		Changes in relations with friends and family (N=1982)		Willingness to contact Muslims (N=1925)[a]	
	Beta	T (sig)	Beta	T (sig)	Beta	T (sig)
Age	.02	.70	.02	.83	-.11	-4.59***
Sex	.14	6.70***	.01	.59	-.00	-.13
Location	.03	1.41	.01	.35	.08	3.67***
Religiosity	.18	8.05***	.09	3.73***	.02	.65
Use of traditional media	.08	3.47**	.06	2.64**	-.02	.86
Use of social media	.15	6.66***	.07	2.85**	.04	1.84
Psychological distress (K6)			.07	3.10**	-.13	-5.38***

* p<.001, ** p<.01

[a] Sum of willingness to have a non-Muslim as an occasional superficial contact, business partner, guest to the home, close friend, boyfriend/girlfriend, marital partner

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