

# Planning needs and services after collective trauma: should we look for the symptoms of PTSD?

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*After the Madrid March 11, 2004 terrorist attacks, the interplay of politicians, journalists and academicians created an atmosphere of collective trauma. The authors analysed data related to these attacks in a sample of the population of Madrid (N = 503) 18-25 days after the attacks. Post traumatic stress disorder (PTSD) was systematically assessed on the basis of a self-administered interview. The data, however, shows that there is no scientific evidence at all for collective traumatization, or an epidemic of PTSD. The incidence of PTSD ranged from what can be expected as a normal prevalence in general population in Spain under non-traumatic conditions to values that, when applied to the general population, could be considered a dramatic epidemic of PTSD. These results demonstrate that inferences about the impact of traumatic events on the general population largely depend on the measure, definition and criteria used by the researcher. Slightly changing the criteria for PTSD makes an enormous difference to the amount of traumatization that is found. This may help to explain divergent and conflicting messages coming from the so-called population-based epidemiological studies on PTSD. The implications for public health policies related to collective traumatic events are discussed in relation to these results.*

**Keywords:** post traumatic stress disorder (PTSD), post traumatic checklist - civilian version (PCL-C), acute stress disorder, risk factors, stress, terrorism

One week after the terrorist attacks in Spain the mental health authorities announced an epidemic of PTSD.<sup>1</sup> Under the headline 'Marked for ever' the newspaper *El Mundo* (21 March, 2004) stated: 'The authorities expect that between 3 and 6% of the population of Madrid will have severe psychological disorders (between 90.000 and 180.000 persons)'. *El País*, the main newspaper in Spain, with more than two million readers in the weekend edition, gave similar figures (Sampedro, 2004): '... damage is not only to be expected in the town. The diffusion of the images of the bombings and the reactions of victims and relatives makes all Spain vulnerable to the consequences of terrorism'. What is the impact of critical incidents, natural and man-made disasters, in the general population? How should the government respond to it? These questions are the subjects of an intense debate in newspapers, magazines, television programmes and scientific literature (Pérez-Sales, Cervellón, Vázquez, Vidales & Gaborit, 2005). One approach states that governments should screen the population for clinical symptoms of psychiatric disorder and provides clinical treatment (Bryant & Harvey, 2000; Litz, Gray, Bryant & Adler, 2002; Prigerson, Shear & Jacobs, 1999; Nathaniel, Wolmer, Meltem, Deniz, Smadar & Yanki, 2002). This is the strategy recommended by some of the leading institutions in the field such as the International Society for Traumatic Stress Studies

(Foa, Keane & Friedman, 2000; Ritchie, Watson & Friedman, in press), or the USA National Center for PTSD (Leskin, Ruzek, Friedman & Gusman, 1999).

Another approach puts the main focus on the breakdown of the social fabric and providing tools for community rebuilding and empowerment through capacity building. This response is advocated by a number of researchers, organizations and institutions like the World Health Organization (Van Ommeren, Saxenas & Saraceno, 2005), the International Federation of Red Cross and Red Crescent Societies (2003) and the Inter-Agency Standing Committee (IASC, in press).

The purpose of our study is to analyse the applicability of the PTSD construct and its usage in population-based epidemiological studies after a collective traumatic event, as a tool for planning needs and services.

### **Methods to assess trauma**

Researchers have used three different ways of assessing the impact of these events on the general population. The first strategy has been to use questionnaires that basically cover a number of symptoms related to traumatic stress reactions. These instruments are not intended to measure PTSD, but to assess emotional distress (*'Have you felt emotionally affected by the images you saw on TV?'* or *'Has the terrorist attack affected your daily functioning (i.e. not using public transport)?'*). A second measurement strategy has been the use of self-report symptom questionnaires that cover PTSD symptoms as defined within the current, official diagnostic systems (e.g., DSM-IV-TR, American Psychiatric Association (APA), 2000) in order to estimate the amount of people suffering from traumatic stress disorders. Instruments such as the impact of events scale (IES) or the post-traumatic checklist-civilian version

(PCL-C) are examples of this approach. The PCL-C, for instance, is a self-report instrument covering the 17 symptoms included in the definition of PTSD as described in the DSM-IV-TR. Although the questionnaires do not strictly follow all the DSM-IV [American Psychiatric Association (APA), 1996] diagnostic criteria, apart from the list of symptoms, it is assumed that figures of probable PTSD diagnoses can be inferred based on the participant's scores on these questionnaires. Based on previous studies, different cut-off scores have been proposed, particularly for the PCL-C. A cut-off score is a given test score that is hypothesized to allow a valid classification of a person as a 'psychiatric case'. Yet, there is no agreement on which is the best cut-off score for, for instance, the IES or the PCL-C.

Finally, a third measurement strategy is to use full diagnostic criteria to verify the presence of mental disorders (typically PTSD or acute stress disorder). In this case, to receive a diagnosis of PTSD participants must fulfil not only PTSD symptoms (which are covered by Criteria B, C, and D according to the DSM-IV, see Table 1) but also the rest of requirements needed to give a full diagnosis of PTSD (i.e., Criterion A1: *Being exposed to a traumatic event that involved physical threat*; Criterion A2: *Subjective reactions of fear, helplessness or horror* and, perhaps most important, Criterion F: *Social impairment in daily activities*). Examples of the first approach are the study by Schuster, Stein, Jaycox, Collins, Marshall, Elliott, Zhou, Kanouse, Morrison & Berry (2001), the follow-up study by Stein, Elliott, Jaycox, Collins, Berry, Klein & Schuster (2004), and the study of Herman, Felton & Susser, (2002), after the September 11 terrorist attacks in the USA. These studies led to the very alarming figures. However, a critical analysis of these studies may lead to different conclusions (Vázquez, 2005) as all these

**Table 1. Outline of the DSM-IV-TR diagnostic criteria for PTSD (APA, 2000)**

Post traumatic stress disorder (PTSD)

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- Criterion A1: Exposed to a traumatic event that involved physical threat
- Criterion A2: Subjective reactions of fear, helplessness or horror
- Criterion B: Re-experiencing the event (1 out of 5 symptoms):
1. Intrusive recollections
  2. Distressing dreams
  3. Reacting or feeling the event again
  4. Distress at exposure
  5. Physiological reactivity on exposure
- Criterion C: Persistent avoidance (3 out of 7):
1. Efforts to avoid thoughts, feelings
  2. Efforts to avoid reminding activities
  3. Inability to recall aspects of trauma
  4. Diminished interest to participate in activities
  5. Feelings of detachment from others
  6. Restricted range of affect
  7. Sense of foreshortened future
- Criterion D: Hyperarousal (1 out of 5):
1. Insomnia
  2. Irritability or outbursts of anger
  3. Difficulty concentrating
  4. Hyper-vigilance
  5. Exaggerated startle response
- Criterion E: Duration of symptoms (B, C, and D): >1 month
- Criterion F: Significant distress or social impairment
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studies used *ad hoc* definitions of emotional consequences of traumatic events.

Examples of the second strategy are the studies by Silver, Holman, McIntosh, Poulin & Gil-Rivas (2002) or Blanchard, Kuhn, Rowell, Hickling, Wittrock & Rogers

(2004), also after the September 11 terrorist attacks, both using the PCL-C (Weathers, Litz, Herman, Huska & Keane, 1993). For instance, using the PCL-C with a cut-off score of 50, Schlenger, Caddell, Ebert, Jordan, Rourke, Wilson, et al., (2002) found that among their nationally representative sample of 2,273 adults, interviewed 1-2 months after the terrorist attacks on the USA of September 11, 2001, the overall rates of probable PTSD were 11.2% in New York City, 2.7% in Washington, D.C., 3.6% in major metropolitan areas, and 4% in the rest of the country. However, using a lower cut-off score of 40 in the same instrument, Blanchard, et al. (2004) have published that the prevalence of probable PTSD for their university samples from Albany, Augusta, and North Dakota (thousands of kilometres away from New York) were, respectively, 11.3%, 7.4% and 3.4%. When deciding which is the best cut-off score for a questionnaire, the emphasis can be on sensitivity (maximizing detection of probably cases) or on specificity (what someone considered a 'case' is a true 'case'). Unfortunately, there is no agreement in the literature on the best cut-off strategies, with values ranging from 40 to 50 (Ruggiero, Del Ben, Scotti & Rabalais, 2003), and the choice of one or the other may lead to dramatically different results.

### Help seeking behaviour

In spite of the rather apocalyptic announcements in the Spanish press, based on aprioristic considerations (theories or assumptions that cannot be proven or disproven by experience) by politicians, health authorities and certain academic sectors, subsequent data in the following year on mental health services showed clearly that there was only a slight increase in the demand for psychiatric consultation in Madrid. This result is clearly

similar to that found after the September 11 attacks in the US, where no psychiatric epidemic occurred, either among the general population (Boscarino, Galea, Ahern, Resnick & Vlahov, 2002) or among populations considered vulnerable to crisis situations, such as Vietnam veterans (Rosenheck & Fontana, 2003). Also consistent with these findings, the data from large US managed, behavioural health organizations had similarly shown a pattern of no significant increases in prescription of psychotropic medications between September 2001 and January 2002 (McCarter & Goldman, 2002).

In a follow-up of a subsample of the RAND Corporation study (Stein, et al., 2004) the authors concluded that for the vast majority of people, family and friends were the main source for advice and talking, whereas only 11% sought some advice from the general health system, and there was almost no demand from the specialized mental health system (Stein, et al., 2004). This help seeking behaviour is reflected in a study conducted in London three weeks after the 7 July 2005 bombings. These authors found out that less than 1% of 1,010 people interviewed felt that they needed professional help to deal with their emotional response to the attacks (Rubin, Brewin, Greenberg, Simpson & Wessely, 2005). We designed a study to test how these confusing results in the estimate of needs, based on general-population epidemiological studies, could be better understood (Vázquez, Pérez-Sales & Matt, 2006).

## **Method**

*Participants.* One week after the March 11, 2004 attack, a class of university psychology students in Madrid was asked to participate in a study on the effects of terrorist attacks. Students completed a questionnaire and recruited two other adult persons, aged 18

and older, who were in Madrid on March 11 2004. Through this snowball sampling method we obtained a sub-sample of the non-random general population of Madrid. The final sample was therefore composed of 194 university students and 309 persons from the general population.<sup>2</sup> All participants returned the questionnaires 18-25 days after the terrorist event. The final total sample consisted of 503 respondents (67% female) whose average age was 31.4 years.

### *Measures*

*Initial reactions (Criterion A2, DSM-IV).* To explore whether different initial reactions could affect the development of subsequent trauma-related symptoms, we used a 10-point rating scale (from 0 = 'not at all' to 10 = 'extreme intensity') on which participants rated the intensity of 'fear', 'feelings of horror' and 'helplessness' in the first hours after the trauma occurred. In addition to these three symptoms that make up DSM-IV Criterion A2 for PTSD (APA, 2000), we also examined other initial reactions that may play an important role in the development of PTSD, e.g., fear that someone known to the person could have been affected, bodily symptoms such as sweating, trembling, feeling upset and anger. (Brewin, 2003; Bracha, Williams, Haynes, Kubany, Ralston & Yamashita, 2004). Participants also rated the length in hours of these emotional reactions in the 24-hour period following the attacks.

*Post-traumatic symptoms (Criteria B, C and D, DSM-IV).* The post traumatic stress disorder checklist – civilian version (PCL-C) is a 17-item self-report measure of post traumatic stress reactions that adequately covers the set of symptoms associated with PTSD as defined in the DSM-IV (Weathers, et al., 1993) – Criteria B (re-experiencing), C (avoidance) and D (hyper-arousal). Items are scored on a

scale anchored from 1 (not at all) to 5 (extremely). The possible range of scores is 17–65.<sup>3</sup> Similar to the majority of studies related to the September 11 events (e.g., Blanchard, et al., 2004), questions were explicitly framed with respect to the March 11 terrorist attacks. The scores on the PCL-C were used in three different ways.

- a) Substantial stress level (SL). To compare our data with those from previous studies following the first mentioned strategy (Schuster, et al., 2001; Stein, et al., 2004; Matt & Vazquez, submitted), SL was defined as an answer of 4 ('quite a bit') or 5 ('extremely') to one or more of five PCL-C items.
- b) PCL-C total scores. Probably PTSD diagnosis. Following the second strategy, PCL total score and the three subscales that correspond to the DSM-IV Criteria B, C and D, respectively (APA, 1994), were computed. To determine rates of psychological distress related to PTSD according to the third strategy, three cut-off scores differing in restrictiveness were compared.
  - b.1) *Low threshold criterion* (PCL total score >44). This criterion, which maximizes the detection of 'cases' increasing the risk of 'false cases' has been repeatedly used in epidemiological studies related to the September 11 attacks (Blanchard, et al., 2004).
  - b.2) *High threshold criteria* (PCL >50). A cut-off score of 50 or above has also been used in national studies on the effects of the September 11 attacks (Schlenger et al., 2002). It limits the detection of 'cases' but increases the possibility that a 'case' is really a 'case'.
  - b.3) *High threshold criteria (PCL >50) with severity indicators*. Even in this case there is a high risk of 'false positives'. Scoring one or two ('very occasionally or 'occasion-

ally") in very unspecific items like 'having nightmares' or 'avoiding situations related to the event' might not be considered as significant symptoms by a clinician in an interview. Yet, to reduce false positive cases it has been suggested by some authors (Ruggiero, et al., 2003), that when looking for a PTSD diagnosis, it is advisable to compute items only when reaching a minimum severity threshold (i.e., a score of 4 or 5: 'quite a bit' or 'extremely', respectively).<sup>4</sup>

- c) *Clinical criteria based on psychometric measures*. Finally, based on the three strategies, we established a true DSM-IV-based strategy consisting of checking whether a given criterion was fulfilled. Criterion A2 was considered to have been met when a participant responded with a score of 8 or above to any of the reactions described in DSM-IV (i.e., horror, fear, or helplessness).<sup>5</sup> Criteria B, C and D were considered to have been met whenever a participant met the number of symptoms required respectively for each criterion (one out of five re-experiencing symptoms, three out of seven avoidance symptoms, and two out of five hyperarousal symptoms). Presence of a symptom was defined by a score of 4 or 5 on each corresponding PCL-C item. Criterion F was met if a participant scored 8 or above on the global functioning item.<sup>6</sup>

*Global functioning (Criterion F, DSM-IV)*. Problems in 'global functioning' (Criterion F for DSM-IV PTSD; APA, 2000) assessed the extent to which the March 11 events were still affecting participants' daily activities at work, at home, or in interpersonal relations on a scale of 1 (not affected in daily activities) to 10 (extremely affected in daily activities).

## Results

### *Post traumatic stress responses (PCL-direct scores)*

The mean PCL-C total score was 31.9 (Sd = 12.9) (see Table 2). An analysis of gender differences showed that women had a more intense reaction than men, as reflected in higher scores on the PCL-C total ( $t(487) = 3.15, p < 0.002$ ), symptoms of re-experiencing ( $t(487) = 3.85, p < 0.001$ ) and hyper-arousal ( $t(487) = 2.97, p < 0.003$ ). However, there were no significant gender differences on avoidance total score ( $t(487) = 1.16, p < 0.11$ ).

*First strategy: substantial stress.* Overall, a high percentage of respondents (59.2%) manifested a 'substantial stress level' as defined by Schuster, et al. (2001). But, significantly enough, and coincident with previous studies, the mean magnitude of symptoms

( $M = 1.88$ ) did not even reach the severity threshold of 2 (i.e. 'a little bit').

*Second and third strategies: probable PTSD diagnosis based on psychometric measures.* Table 2 shows the data on probable PTSD diagnosis based on PCL scores using different strategies. As can be seen, rates of PTSD significantly changed depending on which criterion was used. For the entire sample, using the cut-off score  $>44$  proposed by Blanchard, Hickling, Barton, Taylor, Loos & Jones-Alexander, (1996), 13.3% of the sample were considered cases (i.e. having a probable PTSD disorder diagnosis), whereas the prevalence rate dropped to just 3.4% when the stricter criterion suggested by Ruggiero, et al. (2003) was used instead. Thus, applying different criteria commonly

**Table 2 Percentage of participants meeting levels of substantial stress (SL) and probable PTSD according to different diagnostic strategies**

	Total sample	Male	Female	PCL definition: DSM-IV-based definition ratio
<u>Psychometric criteria (PCL scores)</u>				
Substantial stress (selected PCL-C items scored 4 or 5)	59.2	52.0	61.7*	
PTSD using PCL $>44$	13.3	11.3	14.4	7:1
PTSD using PCL $>50$ <u>and</u> items scoring $>4$	3.4	2.0	3.8	1.7:1
<u>DSM-IV-based clinical criteria</u>				
All DSM-IV criteria	1.9	1.4	2.1	1:1
Criterion A2 (initial reaction to the event)	78.2	58.2	86.9***	
Criterion B (re-experiencing: 1/5)	56.2	49.0	59.3*	
Criterion C (avoidance: 3/7)	3.8	2.8	4.2	
Criterion D (hyper-arousal: 2/5)	19.1	15.8	20.5	
Criterion F (functioning)	6.3	5.6	6.6	
Criteria B+C+D (cluster of symptoms)	3.2	2.0	3.6	
Criteria A2+B+C+D (initial reaction and symptoms)	2.0	1.4	2.1	

\*  $p < 0.05$ ; \*\*  $p < 0.01$ .

used in studies with the PCL-C resulted in a fourfold difference between probable diagnostic rates.

*Approaching DSM-IV criteria.* The results were even more striking when data were calculated according to the approach modelled after DSM-IV criteria. Only 1.9% of the total sample received a probable diagnosis of PTSD; which means one out of every seven persons of the 'probable cases' using the standard  $PCL > 44$  strategy.

*Initial reactions and post traumatic response.* With the exception of bodily symptoms ( $M = 3.2$ ), the average initial reaction was rather intense, ranging from  $M = 6.0$  ('fear') to  $M = 7.5$  ('helplessness'). This included the three symptoms of the DSM-IV definition of Criterion A as well as other reactions (e.g., feelings of 'anger', 'fear that someone I know could be affected', and feeling 'upset' about what happened). The average duration of the initial reaction was 1.9 hours and, in general, the intensity of these emotional reactions was significantly correlated with all the PCL-C scores (correlations between emotional reactions and PCL-C total score ranged from  $r = .54$  for bodily symptoms to  $r = .32$  for anger).

The analysis of participants' global functioning revealed that, on a 0-10 scale, that the average impact was very low ( $M = 3.7$ ). Gender differences revealed that, compared to men, women had more difficulties in daily activities ( $t(475) = 4.27$ ,  $p < 0.001$ ; 3.84 vs. 3.32) in relation to the March 11 attacks.

## Discussion

'Substantial stress'. As explained before, the strategies of using ad hoc questionnaires with rather superficial concepts like 'substantial stress' is a great source of confusion. This kind of instrument might lead to an overestimation of the epidemiological needs unless a careful analysis of the data and measurement

strategies is previously made. However, the impact of these results in the mass media and the public in general is very important as they are often quoted, even in scientific journals. It does not seem that these kinds of figures, even if they are significant, correspond to a need for psychological intervention, or that they truly correspond with clinically significant conditions. This is especially the case in studies in which remarkably low diagnostic thresholds are used, or are based on self-report tools which may be very vulnerable to social desirability biases in the days following a collective disaster (North & Pfefferbaum, 2002; Muñoz, Crespo, Pérez-Santos & Vázquez, 2004). Being upset or having 'substantial stress' does not mean having a clinical disorder (see a related discussion in Wessely, 2004) but a *normal reaction to an abnormal situation*. Therefore, this kind of naturalistic studies may induce public alarm and confusion (Southwick & Charney, 2004; Shalev, 2004).<sup>7</sup>

'Acute stress disorder'. Based on the symptoms reported in a questionnaire, a preliminary study conducted by Muñoz, et al. (2004) between 18-24 March 2004 showed that 47% of a Madrid general population sample ( $N = 1,179$ ) had an acute stress reaction in relation to the March 11 attacks, as measured by the acute stress disorder scale (ASDS), (Bryant & Harvey, 2000). Initial psychological reactions to the March 11 events were in some cases dramatic and, in fact, as our data showed, intense initial reactions (Criterion A2) were very common. Yet, there is also mounting evidence that these acute responses are limited in scope and quickly return to normal levels (Marshall, Spitzer, & Liebowitz, 1999; McNally, Bryant, & Ehlers 2003; Muñoz, et al., 2004). The *transitory nature* of traumatic stress responses found in the majority of the general population suggests that acute emotional distress should

not be mistaken for direct indicators of delayed PTSD. Furthermore, the overall magnitude of the general population's stress reaction is quite low. Both in our study, as in previous ones, the overall mean intensity of the PTSD symptoms was never above 2 in a 1-5 scale.

As McNally, et al. (2003) and Silver, et al. (2002) have argued, high initial emotional responses may be part of the natural recovery, improving without the assistance of professional help in the presence of supportive environments. Thus, a pattern of acute stress reactions after trauma in the hours, days or even weeks after a traumatic event occurs, should be cautiously interpreted (North & Pfefferbaum, 2002; Kilpatrick, Resnick, Freedy, Pelcovitz, Resick, Roth & van der Kolk, 1998).

### **The psychometric and the DSM-IV-R approaches**

In the present study we used three different strategies to diagnose PTSD based on the PCL-C. Using two different scoring methods and a clinical approach, we found the prevalence rate dropped from 13.3% to 1.9%. Researchers and policy makers should pay attention to these enormous variations in probable prevalence rates (North & Pfefferbaum, 2002), for an adequate and sensible planning of health services (Southwick & Charney, 2004). Unfortunately, there was no sound epidemiological study, as far as we know, that had been conducted in the Madrid general population on the prevalence of PTSD before March 11 2004. There are interesting figures in an ongoing project on the prevalence of DSM-IV mental disorders in six European countries (ESEMeD/MHEDEA, 2004), including Belgium, France, Germany, Italy, the Netherlands and Spain (total N = 21,425). In these countries PTSD 12-month and

lifetime prevalence rates are 0.9%-1.9%, respectively. These figures from well controlled epidemiological studies suggest that figures of probable PTSD in Madrid after the terrorist attacks seem to be not significantly higher than those one can find in the general population under normal conditions. Additionally, it must be stressed that the ESEMeD estimated prevalence for PTSD are quite a lot lower than those found in comparable US studies (Kessler, Sonnega, Bromet, Hughes & Nelson, 1995). Future studies should pay attention to the possibility of directly comparing the figures on psychological reactions to traumatic events in different countries and cultures.

Our findings portray a response to these traumatic events that is consistent with other research, showing a dramatic surge in some emotional symptoms immediately following a collective disaster with little, if any, implication for psychopathology in the general population (McNally, et al., 2003). Yet, the pattern of results of the magnitude of the response calls for the need to be cautious of the dangers of confounding normal emotional distress with clinically significant disorders, especially when using psychometric criteria as the main source of data. We want to stress that this is not an epidemiological study that aimed to derive a prevalence of PTSD in the population of Madrid after the 11 March attacks. The non-random nature of our general population sample prevents us from doing that. This was not the central purpose of our paper, but to provide some critical hints on the limitations of methods that intend to screen for mental disorders in the general population after a collective disaster. In our opinion, epidemiological estimates of similar studies should be carefully examined, as variations in diagnostic cut-off scores and strategies may have dramatic effects on the resulting estimates

and conclusions. Of course, following our argumentation and considering the table that summarizes approaches and results, the no-impact hypothesis seems the more plausible, but the present study cannot be considered a robust epidemiological research for this purpose.

The recent experiences of September 11 (New York and Washington DC), March 11 (Madrid) and July 7 (London) have shown us that there is a true danger in the idea of an 'epidemic' of PTSD that is constructed after a collective disaster, although we now know that there is no scientific basis for this assumption. It might be hypothesized that, in some cases, politicians might be interested in the political advantage of fear, health authorities in the possibility of becoming very important and receiving extra amounts of funds or personnel, the press because the idea of 'trauma' has more acceptance and sells better than the idea of resuming normalcy and resilience, and NGOs because the PTSD figures might be of great help for justifying claims for funds from donors. This could be a very dangerous and misleading cocktail that should warn researchers to be very cautious and strict in their methodologies and assertions.

This cautionary approach in the understanding of the consequences of stressful experiences in the general population by no means denies the impact of those experiences on survivors and witnesses who may have real needs and demands which are not addressed specifically by our study. However, even admitting this impact in selected samples, it is also under discussion whether a PTSD model of trauma is useful to understand the reaction of directly affected people. The usefulness of the PTSD model may also be questioned for many other reasons: it does not contribute to understanding the problems within a cultural and socio-political context

(something of paramount importance in collective disasters associated to war or political violence), and it does not have a diachronic perspective, that is, understanding the traumatic events in the context of an entire life (Martin-Beristain, 2006). The PTSD model based both on a vulnerability model and the idea of *disease* does not help to build psychosocial interventions that should be aimed at providing meaning to the experience and building new narratives of the world, oneself and others. Furthermore, that disease model does not assume that community coping, resilience and sometimes post traumatic growth are part of what can be expected from the majority of the population under difficult circumstances.

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<sup>1</sup> The September 11 terrorist attacks were a turning point in the scientific study of the impact of sudden mass catastrophes on public health. Data began to appear in the immediate hours after the attacks. The first available data were somewhat shocking. The Institute of Social Research of the University of Michigan (2001) published a survey done using non-standardized instruments that showed that 66% of a random sample of 668 adult Americans interviewed 4 to 20 days after the attacks had 'depressive symptoms' (52%), 'sleep problems' (62%) or symptoms in the range of an 'acute stress reaction'. The same day, *WebMed* published an article titled: 'Should America Prepare for a Mental-Health Crisis? Expert Says Terror Strikes Will Cause Millions to Need Help With PTSD' which was quoted in most USA newspapers. In that paper, two psychiatrists explained that given the fact that millions of persons had repeatedly watched the images of the WTC and that this was a major issue of concern among North Americans, an epidemic of PTSD all over the country of insurmountable dimensions might

emerge. In a study by the RAND Corporation 3 to 5 days after the attacks, published using the Priority Speed Publication in the *New England Journal of Medicine* of the 15 November 2001 (Schuster, et al., 2001), 90% of a random sample of Americans interviewed showed 'moderate stress' and 44% living close to the NY area presented at least one out of a list of five stress-related symptoms, which was labeled by the authors as 'substantial stress'. The paper pointed out the necessity of a public health response to what could be considered a major community mental health problem. The immediate announcement by the Commissioner of the New York City Department of Health and Mental Hygiene, that the council had created a database to make a follow-up of the physical and mental health consequences of the attack in the *New Yorker* shared this same line of thought. More than 25,000 people volunteered to be screened every three months for the next 20 years (CNN, March 3, 2004). Similar alarming messages have been repeated in other settings. One week after the terrorist attacks in Spain the mental health authorities announced a probable epidemic of PTSD. They based this expectation on the September 11 alarming and unconfirmed initial figures. Interestingly, a study conducted by Muñoz, et al. (2004) in the first days after the attacks seemed to support this prediction. The authors reported that 47% of the population presented 'symptoms related to Acute Stress Disorder' using the Acute Stress Disorder Scale (ASDS) in a sample of 1179 citizens of Madrid. Although the authors were cautious in interpreting their results, press interviews echoed the results uncritically. Miguel-Tobal, et al. (2004) conducted a study following the same methodology as that of Galea, et al. (2002) after the WTC attacks – i.e., a telephone survey to a sample of 1897 citizens of Madrid 4 to 6 weeks after the bombings. The authors reported preliminary results in a press conference weeks before publishing their results stating that they had found a PTSD prevalence of 3.9% among the Madrid

general population. Figures for 'depression' were 7.5% and an additional 10.9% of the population of Madrid were reported as having had 'panic attacks' related to the bombings. The results were extensively commented in the Spanish press (e.g., *El Mundo*, 29 July 2004, *ABC* 28 July 2004). Another national Spanish newspaper, *El País*, published the following five-column heading: 'More than 40.000 citizens of Madrid affected by Post-Traumatic Stress Disorder' and estimated that 'more than 250,000 persons in Madrid show major depression and similar figures have experienced panic attacks related to the bombings'. Thirty-five psychiatrists and 17 psychologists were employed by the Mental Health Authorities to confront this expected epidemics of PTSD, which is somewhat difficult to understand when no money at all has been invested until now by the health authorities in any kind of psychosocial or community programme with a proactive approach to help the direct survivors or relatives of the people assassinated in the attacks. Talking to the newspaper *La Vanguardia* (22/12/2004), the author of the largest epidemiological study, Martin-Tobal, stated that 'only 3,014 persons had been attended by the Mental Health authorities during the first year' with 'unknown consequences for the future'. The same group presented data in the IX European Congress of Psychology (Granada 3-8 July 2005) from a second wave, 6 months after the attacks, that showed figures close to what would be expected in normal conditions (2.5% prevalence of major depression, 1% PTSD and 3% panic attacks among general population) although the authors discussed the data in terms of 'chronification' of symptoms, something also quoted in press (i.e., *La Vanguardia*, next day). Thus, the idea of an 'epidemic' of PTSD was somehow constructed and fed. It might be hypothesized that there are multiple interests in this construction process: politicians can be interested in the political advantages of inducing fear in the population, health authorities in the possibility of getting funds or personnel, the press in the idea that 'trauma' has

more acceptance and sells better than news on resuming normalcy and, finally, scientific authors may also contribute by being seduced by the idea of public notoriety. All in all, a very dangerous cocktail.

<sup>2</sup> We conducted a series of analyses comparing PCL-C scores in both samples finding no significant differences in any PCL scale. Thus, both samples were combined in this report.

<sup>3</sup> Test-retest reliability at 2-3 days has been reported at 0.96 (Weathers, Litz, Herman, Huska & Keane, 1993) and the overall diagnostic efficiency has been found to be acceptably high at 0.90 (Blanchard, Jones-Alexander, Buckley & Forneris, 1996). In our study, the scale revealed to be highly consistent (Cronbach's  $\alpha = .89$ ).

<sup>4</sup> A score of 3 or above is required for items 1, 2, 9, 10, 12 and 15, whereas a score of 4 or above is required for the rest of the items.

<sup>5</sup> A score of 8 or above in a 1-10 scale would be equivalent to a score of 4 or above in the 1-5 scale of the PCL-C.

<sup>6</sup> Criterion E (duration of symptom more than 1 month) was not directly assessed as this study

was conducted between the third and fourth week after the attacks. Thus, the responses covered a 3-4 week period as the PCL instructions asked subjects to rate the severity of symptoms *since* March 11.

<sup>7</sup> Similar variations in results have been found when researchers have studied initial psychological reactions with the controversial category of acute stress disorder (ASD) – see Vázquez (2005). This new category was first introduced in the DSM-IV (APA, 1996) – see a systematic critical review by Marshall, Spitzer and Liebowitz, 1999 – to cover the measurement of psychological reactions to traumatic events within the first 30 days after a traumatic event.

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