Psicothema

Psicothema 2021, Vol. 33, No. 2, 177-187
doi: 10.7334/psicothema2021.33

ISSN 0214 - 9915 CODEN PSOTEG

www.psicothema.com

Ten Things Every Psychologist Should Know About Treating Psychological Disorders in Victims of Terrorism

María Paz García-Vera, Jesús Sanz, and Ana Sanz-García
Universidad Complutense de Madrid

Abstract

Background: Terrorism remains one of the most serious global problems, affecting a very large number of people, a significant percentage of whom can suffer psychological disorders arising from a terrorist attack. The purpose of this article is to describe the current state of scientific knowledge about these psychological disorders and their treatment. **Method:** Systematic narrative or meta-analytical reviews of the scientific literature on the subject published between 2010 and 2020 were searched for in PsycINFO, MEDLINE, and PTSDpubs. **Results:** The search located 16 systematic reviews whose findings were analyzed, leading to ten conclusions about the most common psychological disorders and their progression, the type and percentage of victims who will be most affected by them, and the most effective and useful treatments for those disorders during the various phases following an attack. **Conclusions:** After a terrorist attack, both direct and indirect victims will need short- and mid-term psychological care and follow up. Direct victims, the direct relatives of any deceased, and other victims significantly exposed to the attack or its consequences, will also need long- and very long-term care and follow up. Currently, trauma-focused cognitive-behavioral therapies are the treatment of choice for victims in the rescue, recovery, and return-to-life phases.

Keywords: Terrorism victims, mental disorders, posttraumatic stress disorder, treatment, reviews.

Resumen

Diez Cosas que Todo Psicólogo Debe Saber Sobre el Tratamiento de los Trastornos Psicológicos en las Víctimas del Terrorismo. **Antecedentes:** el terrorismo es uno de los problemas mundiales más graves, afectando a un número importante de personas, de las cuales un porcentaje significativo puede padecer trastornos psicológicos derivados de un atentado terrorista. El objetivo de este artículo es describir los conocimientos científicos actuales sobre esos trastornos y su tratamiento. **Método:** se buscaron en PsycINFO, MEDLINE y PTSDpubs las revisiones sistemáticas narrativas o metaanalíticas de la literatura científica sobre el tema publicadas en 2010-2020. **Resultados:** se encontraron 16 revisiones cuyos hallazgos permitieron extraer diez conclusiones sobre los trastornos psicológicos más frecuentes y su curso, el tipo y porcentaje de víctimas más afectadas por ellos y los tratamientos más eficaces y útiles para dichos trastornos durante las distintas fases tras un atentado. **Conclusiones:** después de un atentado, tanto las víctimas directas como indirectas necesitarán seguimiento y atención psicológicas a corto y medio plazo y, en el caso de las víctimas directas, los familiares directos de los fallecidos y otras víctimas muy expuestas al atentado o sus consecuencias, también a largo y muy largo plazo. Actualmente, las terapias cognitivo-conductuales centradas en el trauma son el tratamiento de elección para las víctimas en las fases de rescate, recuperación y regreso a la vida.

Palabras clave: víctimas del terrorismo, trastornos mentales, trastorno de estrés postraumático, tratamiento, revisión.

Faced with the enormous scale of the health catastrophe and the economic and social crises caused by the COVID-19 pandemic, other catastrophes and serious problems facing humanity have paled in significance, although they have unfortunately neither disappeared nor decreased, at least, not sufficiently. One of these problems is terrorism. In 2019, there were 6,722 terrorist attacks worldwide, leading to the death of 13,822 people, injuries in 14,542, and the kidnapping and hostage taking of 4,664 people (National Consortium for the Study of Terrorism and Responses to Terrorism [START], 2020, Addendum). Although more than half of the attacks in 2019 occurred in only five countries —Afghanistan (21.1%), Yemen (8.3%), India (8.3%), Iraq (7.4%), and Nigeria (6.1%)— and half of the deaths from terrorist attacks occurred in only two countries —Afghanistan (41.4%) and Nigeria (9%)—, terrorism remains a global problem. In 2019, more than 90 countries suffered at least one terrorist attack, 63 countries suffered at least one death from terrorism, and 18 countries more than one hundred deaths (Institute for Economics & Peace, 2020; START, 2020).

Research into the Psychopathological Consequences of Terrorist Attacks and Their Treatment

The 2019 terrorism data underline the fact that terrorism dramatically affects a very large number of people in all regions of the world each year and justify that, given the traumatic nature of terrorist attacks, psychology and other related scientific

Received: January 29, 2021 • Accepted: February 24, 2021
Corresponding author: María Paz García-Vera
Facultad de Psicología
Universidad Complutense de Madrid
28223 Pozuelo de Alarcón (Spain)
e-mail: mpgvera@psi.ucm.es

disciplines are interested in understanding their psychopathological consequences and the most efficacious and effective treatment for them. Over the past 20 years, scientific literature on these issues has grown rapidly and fruitfully, especially since the September 11, 2001 attacks in New York and Washington DC, known as the 9/11 attacks. These attacks marked a turning point in research, which was reflected in a dramatic increase in the number of scientific publications (Sanz & García-Vera, 2021), such that if, at the beginning of the 21st century, much of the knowledge on these topics came from the broader scientific literature on victims of other traumatic events, currently, the corpus of empirical knowledge about psychological disorders specifically caused by terrorism and their treatment has led to a large number of systematic narrative and meta-analytic reviews. Precisely, this work is based on these reviews, with the ultimate objective of identifying the knowledge that every psychologist or mental health professional who cares for victims of terrorism must take into account to ground and guide their professional practice.

Objectives and Methodology of This Work

The main objective of this paper was to describe the current state of research of the psychopathological consequences of terrorist attacks and their treatment. For this purpose, the findings of the most recent systematic reviews of the scientific literature on the subject between 2010 and 2020 were reviewed. In this sense, this work updates and expands a recent work with similar objectives and methodology, but which did not address the infant-juvenile population of victims of terrorism or the treatment of psychological disorders in adult or minor victims (Sanz & García-Vera, 2021), and it also updates, expands to the infant-juvenile population and improves the methodology of other previous work (García-Vera & Sanz, 2016).

In this paper, a review is considered systematic if, at least, it has established an objective, transparent, and replicable procedure for conducting the search for relevant scientific literature to make the review as complete and bias-free as possible. Such reviews, for example, report the bibliographic databases used, the search strategies followed, and the exclusion and inclusion criteria applied to the located work. The results of the systematic reviews published in 2010-2020 will be supplemented by the results of more recent or very relevant empirical studies that have not been included in those reviews, and with the results of older systematic reviews (e.g., DiMaggio, Galea, & Li, 2009) when their objectives have not yet been adequately addressed by the reviews published in 2010-2020.

To locate these reviews, a search was carried out on December 14, 2020, in the PsycINFO, MEDLINE and PTSDpubs bibliographic databases with the following combination of words in the abstract and document title fields and for the 2010 to 2020 period: (*terrorism* or *terrorist*) and (*depression* or *anxiety* or *PTSD* or "*posttraumatic stress disorder*" or "*post-traumatic stress disorder*" or "*acute stress disorder*" or *depressive* or "*mental health*" or "*mental disorders*" or "*psychological disorders*") and (*review* or *meta-analysis*). Following the schema proposed by the PRISMA statement (Mother et al., 2009), Figure 1 presents the flowchart of the process of locating and selecting systematic reviews for this work, as well as the works that were excluded and the criteria on which that exclusion was based. The search revealed 149 non-duplicate works that, after being screened and evaluated for eligibility, led to the 16 systematic reviews listed in Table 1. Some of these reviews (e.g., García-Vera et al., 2016; Salguero et al., 2011) focused mainly on empirical studies that evaluated the presence of diagnosable mental disorders, rather than on the presence of psychological symptoms, and their results had special importance in the analysis and conclusions of this article, since they ensure that the psychological problems detected in people who have suffered a terrorist attack were clinically significant and caused significant impairment in different aspects of the person's life (social, work or family activities, etc.).

The results of the reviews in Table 1, together with the results of more recent empirical studies and older reviews addressing objectives not covered by the reviews in Table 1, are reasonably coincidental in pointing out 10 conclusions about the psychopathological consequences of attacks and their treatment that show good empirical strength and will be detailed in the next section.

Conclusions About the Psychopathological Consequences of Terrorist Attacks and Their Treatment

1. Most people affected by a terrorist attack, whether adults, adolescents, or children, will not develop psychological disorders and will be able to recover normally, without disorders.

After a terrorist attack, even among direct victims, who present the most psychological disorders, the percentage of people who will not develop posttraumatic stress disorder (PTSD), which is the most common mental disorder after a traumatic event, is higher than that of the people who will (García-Vera et al., 2016; Neria et al., 2011; Perlman et al., 2011; Slone & Mann, 2016; Wilson, 2015). Table 2 presents the average weighted prevalences of PTSD obtained by García-Vera et al. (2016) in their review of studies with different types of direct and indirect victims of terrorism, all of them adults, as well as the median prevalences of PTSD in the indirect child or adolescent victims listed in the reviews of Perlman et al. (2011) and Slone and Mann (2016). For direct adult victims, the prevalence is 38.9% at 1-6 months after the attacks and 32.9% at 6-12 months, so it can be estimated that approximately 60-70% of the direct adult victims will not develop PTSD following a terrorist attack. In the case of indirect victims, the percentage that will not present PTSD after an attack will be higher and, based on data in Table 2, it could be estimated that 70-80% of the relatives of those killed or injured in attacks, 95% of the emergency, rescue, care or recovery personnel, 96% of the adult population in the affected area, 73% of the young children who were direct witnesses of an attack, and 89% of the infant-juvenile population in the affected area will recover from the negative psychological consequences of a terrorist attack without developing PTSD.

2. A significant percentage of victims, whether adults, adolescents, or children, will develop psychological disorders, a percentage that will be well above their prevalence in the general adult or infant-juvenile population.

Table 2 also lists the one-year prevalence rates of PTSD obtained in epidemiological studies with representative samples of the general adult or infant-juvenile population in various countries, including countries where most of the studies of the psychopathological consequences of terrorism and their treatment were conducted (e.g., USA, Spain, Israel). In all cases, these rates, ranging from 0.4% to 3.9%, are lower than the average rates found

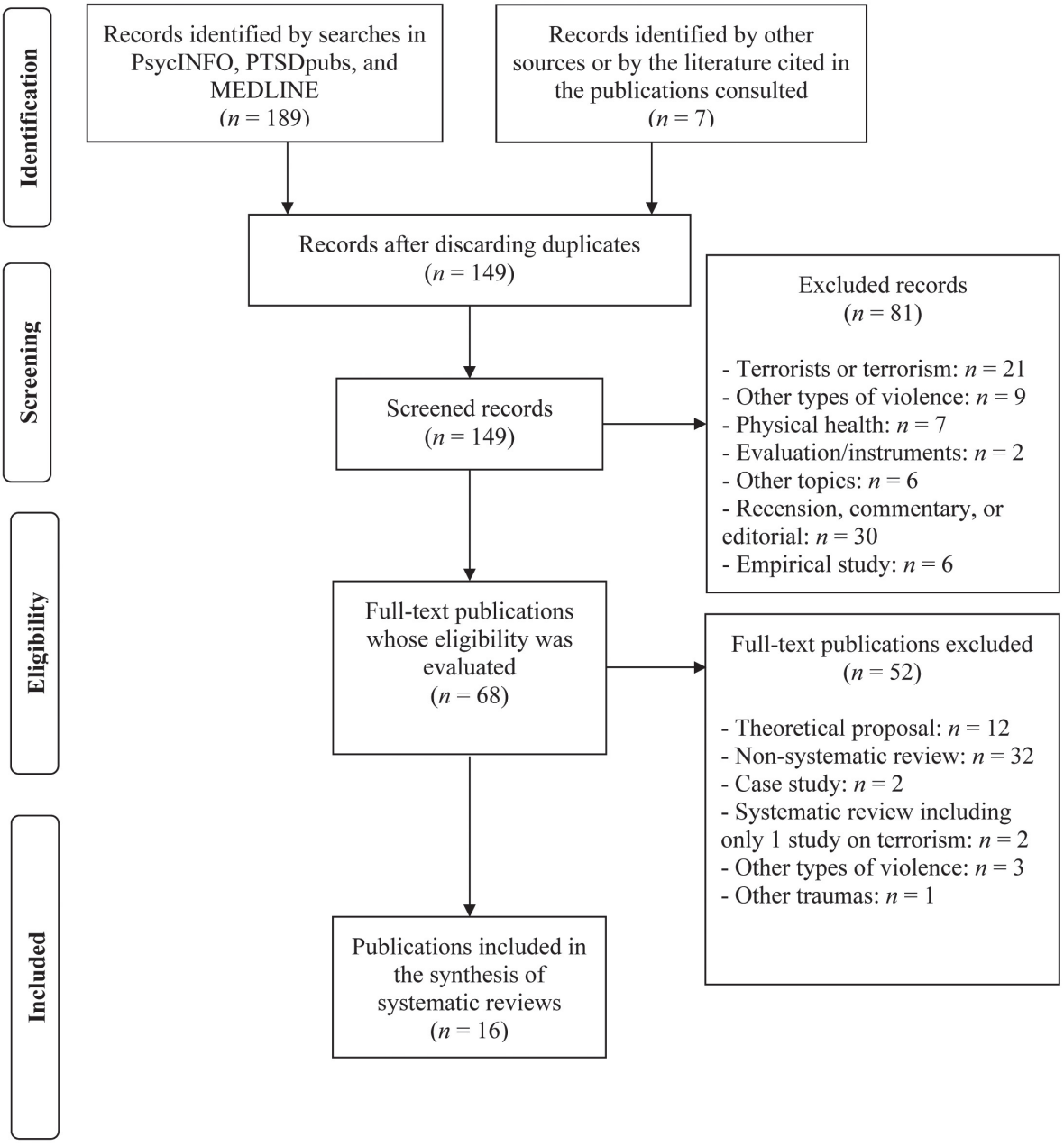

Figure 1. Flowchart of the process of search and selection of the systematic reviews on psychological disorders in victims of terrorism and its treatment

in victims of terrorism 6-12 months after the attacks, which range from 4.4% in the adult population of the affected area to 32.9% in the direct adult victims.

3. The most common psychological disorder in victims of terrorism is PTSD, but victims can have a wide variety of psychological disorders. The following are the most common: major depressive disorder (MDD), anxiety disorders, especially generalized anxiety and panic-agoraphobia disorders, and substance abuse or dependence disorders, whereas complicated grief is the most common disorder in the relatives of the deceased.

The reviews found estimated that, among direct adult victims, the average prevalence of MDD is approximately 20-30% (García-Vera & Sanz, 2010; Salguero et al., 2011), that of generalized anxiety disorder of 7%, and that of panic disorder of 6% (García-Vera & Sanz, 2010), whereas the prevalence of alcohol abuse in all types of victims is 7.3% (DiMaggio et al., 2009). These figures significantly exceed those of the general adult population and, in some cases, broadly. For example, the one-year prevalence of MDD, generalized anxiety disorder, panic disorder and alcohol-related disorders are, respectively, 4%, 0.5%, 0.6%, and 0.7% in Spain (Haro et al., 2006) and 6.7%, 3.1%, 2.7%, and 3.1% in the USA (Kessler et al., 2005).

Among relatives and friends of those killed in an attack, the prevalence of complicated grief can be estimated at 42.6% several years after the attack (Sanz et al., 2020), much higher than the

Table 1
Systematic reviews of psychological disorders arising from terrorist attacks and their treatment

Reference	Type of review	Population	Objective of the review
Bonde et al. (2016)	Narrative and meta-analytical	Adults exposed to a catastrophe, armed conflict, or terrorist attack or mobilized military	Risk of major depression or depressive symptoms
García-Vera & Sanz (2010)	Narrative	Adults exposed to terrorist attacks	Prevalence of depressive and anxiety disorders
García-Vera et al. (2015)	Narrative	Adults exposed to terrorist attacks	Efficacy and effectiveness of any treatment for any psychological disorder
García-Vera et al. (2016)	Narrative	Adults exposed to terrorist attacks	Prevalence of PTSD
Harville et al. (2010)	Narrative	Adult women exposed during pregnancy and postpartum to natural or man-made disasters	Effects of disaster on pregnancy outcome, mental health, and child development
Haugen et al. (2012)	Narrative	Emergency personnel (police, firefighters, paramedics, ambulance drivers, etc.) with a diagnosis of PTSD	PTSD treatment in emergency personnel
Liu et al. (2014)	Meta-analytic	Highly exposed adults vs. non/little-exposed to 9/11 attacks in New York	Risk of probable PTSD in highly exposed vs. non/little-exposed in responders vs. civilians
Lowell et al. (2017)	Narrative	People highly exposed to the 9/11 attacks (who lived or worked near the WTC or the Pentagon; emergency personnel, recovery workers)	Longitudinal course of PTSD, risk and resilience factors, and treatment
Neria et al. (2011)	Narrative	People highly exposed to the 9/11 attacks (who lived or worked near the WTC or the Pentagon; emergency personnel, recovery workers)	Prevalence of PTSD and PTSD risk factors in the first 10 years following the 9/11 attacks
Perlman et al. (2011)	Narrative	People exposed to the 9/11 attacks in New York either directly or indirectly who lived in New York, or indirectly who lived in the rest of the USA or abroad	Short- and medium-term health effects of the attacks, including the prevalence of different psychological disorders and their risk factors
Pfefferbaum et al. (2014)	Narrative	People exposed to disasters through the media	Association between media use and psychological disorders or symptoms
Salguero et al. (2011)	Narrative	Adults exposed to terrorist attacks (directly affected or population of the affected area)	Prevalence of MDD based on MDD diagnostic criteria and main correlates
Sanz et al. (2020)	Narrative	Relatives or friends of those killed in terrorist attacks	Prevalence of complicated grief
Slone & Mann (2016)	Narrative	Children 0-6 years old exposed to wars, armed conflict, or terrorist attacks	Effects on mental health (PTSD, emotional and behavioral symptoms, etc.) and their relationship with parental factors
Smith et al. (2019)	Narrative	Emergency personnel and recovery workers involved in the 9/11 attacks in New York	Short-, medium, long- and very long-term health effects of attacks, including the prevalence of different psychological disorders and their risk factors
Wilson (2015)	Narrative	Emergency personnel (ambulance personnel, firefighters, police) who have intervened in an episode of man-made collective violence	Prevalence of probable PTSD in emergency personnel following an episode of man-made collective violence

prevalence of 9.8% calculated in the meta-analysis of Lundorff et al. (2017) in samples of adults not belonging to the psychiatric population who had experienced the non-traumatic death of a significant person.

Of course, these comparisons, like those made under the previous heading about PTSD, do not have the same precision and validity as comparisons made in empirical studies that directly examined the prevalence of disorders in direct or indirect victims and in control groups not exposed to terrorist attacks or empirical studies comparing the prevalence of victims with that of better matched normative samples. The meta-analytic review of Bonde et al. (2016) addressed this issue concerning depression and their results confirm that exposure to attacks almost doubles the risk of depression (*OR* = 1.9). In addition, the results of Bonde et al. indicate that this increase in the risk of depression is maintained at the mid-term.

Reviews also suggest that, following a terrorist attack, there is an increase in the consumption of tobacco, marijuana, sleeping pills, and prescription drugs in direct or indirect adult victims, an increase which, in the case of tobacco, is higher among victims suffering from PTSD or MDD (DiMaggio et al., 2009; Perlman et al., 2011).

Other psychological disorders and problems that could arise after a terrorist attack have barely been investigated and, therefore, either systematic reviews have not been found in this regard, or their results are not strong enough because they are scarce, like the case with research on the abuse of other drugs such as opiates or cocaine (DiMaggio et al., 2009; Perlman et al., 2011) or on mental disorders other than PTSD in children and adolescents (Perlman et al., 2011; Slone & Mann, 2016), or they are contradictory, as is the case of suicide (Perlman et al., 2011; see Sanz & García-Vera, 2021).

4. Mental disorders can occur in all types of victims: direct (injured and survivors) and indirect (relatives of the deceased/injured in attacks, emergency-rescue-recovery personnel, and residents of the affected areas) but their prevalence will be higher among direct victims and relatives of the deceased.

The average prevalence of PTSD in direct victims is 33-39%, in relatives of the deceased and injured, it is approximately 17-29%, in emergency, rescue, and recovery personnel, it is 5-6%, and in residents of affected areas or cities, it is 4% (García-Vera et al., 2016; Table 2). All of them are well above the prevalence of PTSD of 0.5%, 3.5%, and 0.9% found, for example, in the general adult population of Spain, USA, and Israel, respectively, or the prevalence of PTSD in the general adult population of the other countries listed in Table 2.

Differences in the prevalence of PTSD between different types of victims have to do with the degree of exposure to the attack and its consequences in terms of at least the following levels of analysis: direct victimization versus observation of the attack or its consequences; physical injury and severity; loss of relatives, colleagues, or friends from the attack and degree of relationship with the deceased; number of attacks that have been experienced directly or vicariously; exposure or observation time of the attack or its consequences, and spatial proximity to the site of the attack. In fact, the degree of exposure to the attack is the variable most strongly related to the risk of PTSD and its persistence (Liu et al., 2014; Lowell et al., 2017; Neria et al., 2011; Perlman et al., 2011; Smith et al., 2019). For example, according to the meta-analysis of Liu et al. (2014), among the emergency personnel and the population of the affected area following the 9/11 attacks in New York, the risk of PTSD was twice as high in those most exposed to such attacks compared to little-exposed people (*OR* = 2.05).

Different levels of analysis of the degree of exposure to the attack explain apparent inconsistencies in the differences in the prevalence of PTSD between different types of victims. For example, studies with emergency and rescue professionals following the 3/11 Madrid bombings reported much lower PTSD prevalence figures than studies conducted after the 9/11 terrorist attacks, such

Table 2
Prevalence of post-traumatic stress disorder (PTSD) in victims of terrorist attacks and in the general population

Population / Study	Location	Prevalence of PTSD
Direct adult victims		
García-Vera et al. (2016)	Israel, Spain, and USA	38.9% (1-6 months)
García-Vera et al. (2016)	Israel, Kenia, Spain, and USA	32.9% (6-12 months)
Emergency, rescue, assistance, or recovery personnel		
García-Vera et al. (2016)	Spain and USA	5.1% (1-6 months)
García-Vera et al. (2016)	Kenia, Spain, and USA	6% (6-12 months)
Adult population in the affected area		
García-Vera et al. (2016)	Israel, Spain, and USA	4.1% (1-6 months)
García-Vera et al. (2016)	Spain and USA	4.4% (6-12 months)
Adult relatives and friends of the deceased and injured		
García-Vera et al. (2016)	Israel, Spain, and USA	29.4% (1-6 months)
García-Vera et al. (2016)	Spain	16.9% (6-12 months)
Children of the deceased		
Neria et al. (2011)	USA	29.6% (4 months)
Neria et al. (2011)	USA	20.4% (*M* = 10.5 months)
Children aged 0-6 years direct witnesses of the attacks		
Slone & Mann (2016)	USA	Median = 27%
Infant-juvenile population of the affected area		
Perlman et al. (2011)	USA	Median = 10.6% (4-9 months)
Neria et al. (2011)	USA	Median = 14% (4-13 months)
General adult population		
Kessler et al. (2005)	USA	3.5% (12 months)
Haro et al. (2006)	Spain	0.5% (12 months)
The ESEMeD/MHEDEA 2000 Investigators (2004)	Belgium, France, Germany, Italy, the Netherlands, and Spain	0.9% (12 months)
Karam et al. (2014)	11 high-income countries	1.1% (12 months)
Karam et al. (2014)	6 countries with high-middle incomes	0.7% (12 months)
Karam et al. (2014)	3 countries with low or low-middle incomes	0.8% (12 months)
Karam et al. (2014)	Israel	0.4% (12 months)
General adolescent population		
Kessler et al. (2012)	USA	3.9% (12 months)
General infant-juvenile population		
Canino et al. (2004)	Puerto Rico	0.8% (12 months)

that the prevalence of PTSD in the 3/11 Madrid attacks was lower than its prevalence in Madrid's general population following those attacks, while the opposite occurred in the case of the 9/11 attacks: the prevalence of PTSD was higher in the emergency, rescue, and recovery professionals than in the general population of New York (García-Vera et al., 2016). This discrepancy could be due to the different degree of exposure to human and material losses caused by the attacks at various levels of analysis. First, in the 9/11 attacks, there were a very large number of deaths and injuries among the emergency and rescue personnel, and some of its members directly experienced or observed the collapse of the World Trade Center towers, which makes this group more similar to the relatives of the deceased and injured in attacks or to the direct victims and their high prevalence rates of the PTSD and MDD than to samples of professionals who have helped in other terrorist attacks. Second, rescue efforts lasted longer in the 9/11 attacks than in the 3/11 Madrid attacks. In fact, the review of Smith et al. (2019) found that, among the emergency, rescue and recovery personnel of the 9/11 attacks, the longer they worked at the World Trade Center site, the greater the risk of PTSD.

Of course, when estimating the degree of involvement of emergency, rescue, and recovery personnel, in addition to the degree of exposure, other factors such as the specific type of personnel who intervened or their degree of preparation, among others, must also be taken into account (García-Vera et al., 2016; Neria et al., 2011; Smith et al., 2019). For example, the review of Smith et al. (2019) on the effects of the 9/11 attacks on the health of 9/11 first - responders and recovery workers found that recovery workers showed higher rates of PTSD than emergency personnel and that, among emergency personnel, untrained individuals showed more psychopathological consequences than those who had received training.

Table 3
Prevalence of mental disorders other than PTSD in victims of terrorist attacks and in the general population

Population	Mental disorder	Prevalence
Direct adult victims	Major depression[a]	36.5%
	Major depression[b]	20-30%
	Agoraphobia[a]	17.2%
	Generalized anxiety[a]	8.6%
	Panic[a]	6.3%
Emergency, rescue, assistance, or recovery personnel	Major depression[a]	5.0%
	Agoraphobia[a]	0.7%
	Generalized anxiety[a]	0.7%
	Panic[a]	2.2%
Adult population of the affected area	Major depression[a]	9.1%
	Major depression[b]	4-10%
	Agoraphobia[a]	10.5%
	Generalized anxiety[a]	8.6%
	Panic[a]	2.1%
Adult relatives/friends of the deceased or injured	Major depression[a]	47%
Relatives or friends of the deceased	Complicated grief[c]	42.6%
All kinds of victims	Alcohol abuse[d]	7.3%
General adult population in the USA	Major depression[e]	6.7%
	Agoraphobia[e]	0.8%
	Generalized anxiety[e]	3.1%
	Panic[e]	2.7%
	Alcohol abuse[e]	3.1%
General adult population of Spain	Major depression[c]	3.96%
	Agoraphobia[c]	0.30%
	Generalized anxiety[c]	0.50%
	Panic[c]	0.60%
	Any alcohol disorder[and]	0.69%

Note: [a] García-Vera & Sanz (2010). [b] Salguero et al. (2011). [c] Sanz et al. (2020). [c] DiMaggio et al. (2009). [d] Kessler et al. (2005). [e] Haro et al. (2006)

As can be seen in Table 3, the prevalence of psychological disorders other than PTSD, such as MDD, panic disorder, generalized anxiety disorder, or agoraphobia generally reaches higher numbers in emergency, rescue, and recovery personnel or residents of the affected areas or cities than in the general population, and is usually lower than the prevalence of PTSD, and also usually lower than in the direct victims or relatives of the deceased or injured.

5. Victims of terrorism with mental disorders often have high psychopathological comorbidity, especially PTSD and MDD, which implies greater severity, deterioration, and chronicity.

Data from several of the reviews in Table 1 consistently indicate that psychopathological comorbidity, especially between PTSD, MDD, and anxiety disorders, is very common in victims of terrorism (García-Vera & Sanz, 2010; García-Vera et al., 2016; Neria et al., 2011; Perlman et al., 2011; Salguero et al., 2011). For example, several studies with direct victims have found that more than half of those suffering from PTSD also suffered from MDD (García-Vera & Sanz, 2010). This high comorbidity also appears in other types of victims of terrorism. For example, among recovery personnel who worked after the 9/11 attacks and suffered from probable PTSD, at least 12.7% also met the criteria for probable panic or depression disorder (Perlman et al., 2011). Similarly, after the 9/11 attacks, among residents and workers in southern Manhattan and rescue and recovery personnel, those with a probable PTSD were also 13.9 times more likely to suffer from panic disorder (Perlman et al., 2011).

Although less studied, the data also indicate that comorbidity extends to other psychological disorders, such as substance abuse or prolonged grief. In a study with rescue, recovery, and cleaning workers after 9/11, workers with comorbidity of PTSD, depression, and panic were more likely to also report very high alcohol consumption (Stellman et al., 2008), while the results of the review of Sanz et al. (2020) suggest that there is high comorbidity between complicated grief and PTSD or MDD, so it is estimated that 50-65% of the relatives and friends of the deceased who suffer from complicated grief also suffer from PTSD or MDD.

The finding of high psychopathological comorbidity in trauma victims is important for prognosis and treatment, especially of PTSD with MDD, because it is associated with greater symptomatic severity, greater deterioration in daily functioning, and a more chronic course of symptoms and impairment (Kessler et al., 2005; Shalev et al., 1998), which has also been specifically found in direct and indirect victims of terrorism with comorbidity of PTSD, MDD, or panic disorder (Perlman et al., 2011).

6. In the rescue and recovery phases following a terrorist attack, all victims should be evaluated psychologically and proactively, validly, and reliably, and victims who show a disorder or high symptoms of acute or post-traumatic stress, panic, or other psychological disorders should receive, as first-choice early treatment, trauma-focused cognitive-behavioral therapy (TF-CBT).

To identify the most useful psychosocial interventions, their most appropriate implementation sequence, and the role of the mental health professionals, experts from six countries and various scientific and professional institutions have proposed distinguishing four phases after incidents of collective violence, including terrorist actions: impact (0-48 hours), rescue (0-1 week), recovery (1-4 weeks), and return to life (2 weeks-2 years) (National Institute of Mental Health, 2002). As the diagnosis of some mental disorders, such as acute stress disorder, implies that symptoms must be present for at least three days (DSM-5; American Psychiatric Association, 2013), for this work, we focus on the psychosocial interventions that should be applied in the rescue, recovery, and return-to-life phases.

Regarding the rescue and recovery phases, as most direct or indirect victims of a terrorist attack will not develop psychological disorders, such interventions should not apply to all victims, but a proactive and effective psychological evaluation should be carried out based on valid and reliable tools to identify victims who are more likely to develop psychological disorders in the future, among whom the results of the reviews point to victims who, in the early days, suffer from acute stress disorder, panic attacks, or elevated symptoms of traumatic stress or panic (Neria et al., 2011; Perlman et al., 2011; Salguero et al., 2011), which coincides with the scientific literature on other traumatic events (Ozer et al., 2008; Shalev et al., 2019). These disorders and symptoms should be the targets of such interventions, which, as they are applied in the first weeks or months after a traumatic event up to a maximum of three months, are called early interventions or treatments.

No review has been found on the efficacy or effectiveness (clinical utility) of early treatments with victims of terrorism, whereas the most recent reviews with victims of all kinds of traumatic events (Astill Wright et al., 2019; Roberts et al., 2019) only mention one study with victims of terrorism, that of Shalev et al. (2012). In this study, it was found that, in a sample of victims of different traumas composed of 10.7% of victims of terrorism, prolonged exposure and cognitive therapy —which are part of TF-CBT—, applied for an average of 30 days after the traumatic event, were effective in preventing PTSD and reducing PTSD symptomatology compared to a selective serotonin reuptake inhibitor (escitalopram), a waiting-list condition, and a placebo drug.

Therefore, given the limited specific information on victims of terrorism, the results of the most recent reviews with victims of all kinds of traumatic events should be consulted. The results of the meta-analysis of Roberts et al. (2019), based on 61 experimental studies with a control group, indicate that only three types of early psychological treatments show clearly significant efficacy data for PTSD in victims of traumatic events: TF-CBT, cognitive therapy without exposure, and eye movement desensitization and reprocessing therapy (EMDR), of which TF-CBT presents the most robust data. The results of Roberts et al. (2019) also show that the therapeutic benefits of early psychological treatments are significant for victims who have symptoms of traumatic stress, especially if they have a diagnosis of acute stress disorder or PTSD, but not for victims who do not have such symptoms.

On the other hand, the results of the meta-analysis of Astill Wright et al. (2019), based on 19 experimental studies with a control group, indicate that there is currently no early pharmacological treatment that presents significant efficacy data for PTSD in victims of traumatic events, with the exception of hydrocortisone. However, although promising, this drug presents limited efficacy data, which, together with its adverse effects, discourage its routine use (Astill Wright et al., 2019).

7. One year after the attacks, their psychopathological impacts will have decreased considerably in residents of the affected areas and in emergency-rescue-recovery personnel, but not much in the injured or the relatives of the deceased or in people highly exposed to the attack or its consequences.

The results of longitudinal studies reviewed by García-Vera et al. (2016), particularly those carried out on the 3/11 Madrid attacks, indicate that, at 6-9 months of the attacks, there is a significant reduction in the frequency of PTSD both in residents of the affected areas and emergency and assistance personnel, so that, after that time, the percentage of people with PTSD in these two groups of indirect victims is similar to its prevalence in the general population. On the contrary, in the direct victims or the relatives of the deceased, 6-9 months or one year after the attacks, no significant reduction in the frequency of PTSD is observed or, if it occurs, this frequency remains well above the prevalence of PTSD in the general population. Something similar occurs in the course of depressive and anxiety disorders in the victims of terrorism (García-Vera & Sanz, 2010; Salguero et al., 2011).

The reviews of Neria et al. (2011), Perlman et al. (2011), and Lowell et al. (2017) have addressed the course of PTSD in the direct and indirect victims of the 9/11 attacks, both in the short- and medium-term, and in the long-term, up to five or six years after the attacks. Their results confirm the results of the review of García-Vera et al. (2016), informing that course of PTSD varies for different types of victims. Overall, after one or two years, the prevalence of PTSD had decreased significantly in New York's general population—the affected geographic area—as well as in the overall USA population. However, in the one-, two-three-, or three-four-year follow-ups after the 9/11 attacks, PTSD prevalence rates among emergency, rescue, and recovery workers, especially among the firefighters, either did not change or even increased.

This stable or worsening course of the PTSD in emergency, rescue, assistance and recovery personnel who helped after the 9/11 attacks seems to be at odds with the aforementioned course of improvement of PTSD found in the same type of personnel following the 3/11 Madrid attacks, but this is logical considering the increased degree of exposure to the attacks and their consequences suffered by this personnel in the 9/11 attacks compared to the 3/11 Madrid attacks, as explained above in relation to Conclusion 4.

8. Even in the very long term (5, 10, or 20 years after the attacks), there will be a very large percentage of victims who will continue to have psychological disorders, particularly among the injured victims, the relatives of the deceased, and people highly exposed to the attack or its consequences.

Two longitudinal studies with direct victims assessing them between 6 and 7 years after suffering the 9/11 terrorist attacks in New York or the 1995 bombing in Oklahoma City, found that 15% and 26%, respectively, of these victims presented PTSD (García-Vera et al., 2016). Although these percentages reflected a significant reduction from the prevalence of PTSD found years earlier—19% three years after the 9/11 attacks and 41% six to nine months after the Oklahoma City bombing—they were still much higher percentages than those of the general population of the USA, about 3.5% (Kessler et al., 2005).

The results contained in the reviews of García-Vera et al. (2016), Lowell et al. (2017), Neria et al. (2011), and Smith et al. (2019) indicate a similar pattern in emergency personnel or the rescue, recovery, and clean-up workers who intervened after the 9/11 attacks. In these indirect victims, at 5, 6.5, or 10 years after the attacks, although reductions in the prevalence of PTSD were generally found, it was still higher than that usually found in the general USA population, and some studies even found slight increases in the prevalence over the very long term. In this regard, as mentioned above, it should be recalled that many emergency personnel and many of the workers who intervened after the 9/11 attacks experienced a high degree of exposure to the attacks and their consequences and that, therefore, the presence of psychological disorders and their course in these indirect victims is more similar to that of the direct victims than that of emergency, rescue, and recovery personnel who intervened after other terrorist attacks, such as the 3/11 Madrid bombings or the Oklahoma City bombing.

In fact, psychological disorders can be more or less frequent in the very long term depending not only on the degree of exposure to the terrorist attack and its consequences but also on the circumstances of the attack and the circumstances surrounding the victims following the attacks. For example, a recent study of 507 direct and indirect victims – relatives of the deceased and injured – of all types of terrorist attacks in Spain, found that, after an average of 21 years since the attack, 27% of the victims suffered from PTSD, 18% from MDD, and 37% from an anxiety disorder (Gutiérrez et al., 2020). There may be many reasons why victims of terrorism in Spain have such a high percentage of psychological disorders in the very long term, but some non-exclusive explanations could be proposed, which would presumably interact with each other to account for this high prevalence. These explanations involve the degree of the victims' exposure to the attacks and their consequences within the context of the social and historical characteristics of terrorism in Spain, as well as the support that victims of terrorism have received from Spanish society. In particular, this high prevalence could be due to the Spanish victims having had: 1) intense and repeated exposure to attacks and great vital stress following them, in the form of direct or close exposure to other attacks, news of attacks in the media, street violence related to terrorism, continued personal threats by terrorists or their environment, etc., and (2) scarce support from society, at least until very recent times (García-Vera & Sanz, 2016; Sanz & García-Vera, 2021).

The role of social support will be further deepened, in relation to the next conclusion. However, concerning the role of the other above-mentioned factors, it should be noted, for example, that during the "lead years" of terrorism in Spain (1978-1988), there were more than 65 deaths per year from attacks and, during 1991-2013, there were 5,113 attacks of street violence on companies in the Spanish autonomous community of the Basque Country carried out by youth organizations related to the ETA terrorist group and, in 2002, there were 963 people —including politicians, judges, prosecutors, journalists, or university professors— who had to have bodyguards due to ETA's threat to their lives —not counting police and military members, all ETA targets— and that, during 1995-2000, there was an average of 804 terrorist attacks each year, counting both ETA attacks and street violence (García-Vera & Sanz, 2016; López Romo, 2015). In addition, according to data from the study of Martín-Peña (2013), the psychological violence experienced by the victims and those threatened by terrorism in the Basque Country was very high: 69% suffered social isolation, 68% experienced control and surveillance by people close to the terrorist environment, 74% received threats, 79% suffered contempt, humiliation, and rejection, and 90% felt stigmatized. All these data indicate that the victims of terrorism in Spain, compared to the victims of the attacks that occurred, for example, in the USA, have experienced intense and repeated exposure to attacks and have subsequently suffered many stressful events related to them. This probably aggravated their psychopathological impact, given that increased exposure to trauma and a subsequent higher and more continuous level of life stress are variables with strong empirical support as risk factors, for example, for PTSD, not only among victims of terrorism (Lowell et al., 2017) but also among victims of other traumatic events (Brewin et al., 2000; Ozer et al., 2008; Zalta et al., 2020).

In short, when estimating the psychopathological consequences of a terrorist attack in the very long term, but also in the short, medium, or long term, it is necessary to analyze the characteristics of the terrorist attack itself and the contexts of violence and threat in which it occurred, as well as the political, social, and cultural characteristics of the community affected by the attack.

9. The influence of social factors in the course of the psychopathological consequences is very important, both as a protective or buffering element and as a source of secondary victimization, and should be included in any psychological intervention with victims of terrorism.

The results of the reviews of Lowell et al. (2017) and Smith et al. (2019) consistently point out that social factors, and in particular, the social support experienced by the victims following a terrorist attack, play an important role in predicting the course of psychological disorders and symptoms arising from the attack. For example, according to the review of Smith et al. (2019), ten years after the 9/11 attacks, PTSD was more likely to persist or even worsen in the emergency personnel and recovery workers if they had little social support, whereas, according to the review of Lowell et al. (2017) of longitudinal studies, low social support following the 9/11 attacks contributed to the chronicity of PTSD among the people most exposed to such attacks. The results of these two reviews with victims of terrorism coincide with those found in the reviews carried out with victims of other traumatic events (Brewin et al., 2000; Ozer et al., 2008; Zalta et al., 2020) regarding the lack of social support as a risk factor strongly associated with PTSD and, consequently, the important role of social support as a protective or buffering factor against the psychopathological consequences of traumatic events.

More importantly, the absence of adequate social support could explain, as mentioned above, the high, very long-term prevalence of psychological disorders among the victims of terrorism in Spain found by Gutiérrez et al. (2020). In Spain, during the 70s, 80s, and 90s of the twentieth century, there was a lack of empathy, sensitivity, and social support towards victims by society, so there were times when they even had to "hide" and almost be ashamed of their status as victims, especially in the Basque Country or if the direct victims belonged to the army or the security forces (Calleja, 2006; López Romo, 2015). For example, the study of López Romo (2015) found that 76% of the murders carried out by ETA during the years of the democratic transition (1978-1981), and 82% of those carried out during the years of democratic consolidation (1982-1995) did not generate any social mobilization in the Basque Country to support the victims, which would even imply that, in this case, the social factors could be additional victimization factors, especially when the results of that same study also revealed that 100% of the deaths of ETA members elicited demonstrations or strikes supporting the deceased terrorists.

As a result, to be more effective, psychological interventions and treatments of victims of terrorism should systematically assess the breadth and intensity of the social networks available to the victims at various stages following an attack and the extent to which the victim has previously used these social networks in stressful circumstances and has the skills to obtain such social support. More importantly, the availability and access to social support should be seen within a broader framework of the social, material, and personal resources available to victims (e.g., marriage or partner, work, home, financial security), as traumatic events like terrorist attacks often involve numerous and profound losses of victims' resources in multiple domains (Hobfoll et al., 1995), which causes additional high levels of stress that would promote the onset, maintenance, or exacerbation of psychological disorders and symptoms. For example, ten years after the 9/11 attacks, PTSD was more likely to persist or even worsen in emergency personnel and recovery workers if they were unemployed (Smith et al., 2019).

10. In the back-to-life phase, TF-CBT has been shown to be effective and useful for the treatment of PTSD and depressive and anxiety disorders in victims of terrorism, including those suffering from these disorders in the very long term.

Only TF-CBT and exposure therapy have been the subject of adequate empirical research concerning their efficacy or clinical usefulness in adult victims with PTSD in the return-to-life phase following a terrorist attack. The former is by far the most analyzed (four efficacy studies, including three experimental and one quasi-experimental study, and three clinical utility studies), and with clearly positive and consistent efficacy and clinical utility outcomes (García-Vera et al., 2015; Haugen et al., 2012; Lowell et al., 2017). In contrast, exposure therapy has only been the subject of a single efficacy study with an experimental design, and with worse outcomes than those found for TF-CBT. For example, at post-treatment, only 17% of the victims of terrorism with PTSD who had received exposure therapy with a placebo drug improved clinically, a percentage that rose to 42% when exposure therapy was combined with paroxetine, but was still lower than the rates of clinical improvement found among victims with PTSD who had received TF-CBT, which ranged from 33% to 69%, with an average of 57.4% (García-Vera et al., 2015).

In their review, Lowell et al. (2017) also included a study that analyzed the effectiveness (clinical utility) of EMDR with adult victims of the 9/11 attacks in New York (Silver et al., 2005), but this study did not provide solid data on the effectiveness of EMDR for PTSD or other mental disorders because it did not report the number of victims with diagnosable mental disorders.

Regarding the treatment of PTSD and other psychological disorders that child and adolescent victims of terrorism may suffer, the reviews identified in this work included only two studies, both conducted with victims of the 9/11 attacks in New York and both comparing two types of psychological treatments: the first study compared the effectiveness of short CBT and TF-CBT, and the second, the effectiveness of TF-CBT and narrative therapy (Lowell et al., 2017). The results of the studies suggest the clinical utility of the three types of therapy tested to reduce the symptomatology of PTSD, depression, and anxiety, especially TF-CBT, as it is the only therapy whose clinical utility has been replicated in a second study. However, these results are limited by the lack of a control group, randomization, and information on the number of children or adolescents who had diagnosable mental disorders, and this affected both studies.

In short, the reviewed scientific literature suggests that TF-CBT is the first-choice therapeutic alternative for adult victims of terrorism suffering from PTSD and possibly also for children and adolescents suffering from PTSD after an attack, at least until further studies are published with more favorable results about the efficacy of exposure therapy and until there are studies on the specific efficacy in victims of terrorism of other psychological therapies shown to be effective for PTSD arising from other traumatic events (e.g., EMDR, stress management training), and, of course, over other psychological or pharmacological therapies that not only have never been tested with victims of terrorism but also lack adequate empirical support in terms of their efficacy for PTSD produced by other traumatic situations or that are less effective for it.

Corroborating the efficacy and clinical usefulness of TF-CBT for PTSD that victims of terrorism may suffer, the results of three empirical studies recently conducted with adult victims of terrorist attacks in Spain indicate that TF-CBT is effective and clinically useful in victims suffering from very long-term PTSD, MDD, and/or anxiety disorders, specifically, an average of 18-20 years after the attack, and that its therapeutic benefits extend to at least one or two years after its application (Cobos Redondo, 2020; Gesteira Santos et al., 2018; Moreno et al., 2019).

Limitations and Future Directions

The conclusions of this article should be assessed taking into account the limitations of the systematic reviews that have been analysed. These limitations indicate specific gaps in research that future studies should consider. Among such limitations and gaps, the following should be noted: the comorbidity among mental disorders and physical illnesses; the personal biopsychosocial factors distinct from social support, terrorism exposure or life stress that may affect the onset, severity, exacerbation, or maintenance of mental disorders; the prevalence of some mental disorders that can also be particularly frequent among some terrorism victims (e.g., prolonged grief disorder or persistent complex bereavement disorder), or can be very frequent among general population (e.g., cocaine, amphetamine, opioid, hallucinogen, club drug use disorders) or subpopulations (e.g., disruptive behaviour/dissocial disorders), or can be lethal (e.g., suicide); the consequences on mental health of other types of indirect victims (e.g., family members of emergency, rescue, or recovery personnel); the treatment of other mental disorders distinct from PTSD; and, especially, the mental health consequences of terrorist attacks that take place in countries where there are more terrorist attacks, and therefore, more victims that have been killed, hurt, kidnaped or taken hostage (e.g., Afghanistan, Yemen, India, Iraq, Nigeria) and the treatment of those consequences in such as countries.

Notwithstanding those limitations and gaps, we have been able to extract 10 conclusions that, with a sufficient level of certainty, allow us to estimate, for example, how many victims will develop mental disorders following a terrorist attack, the type, frequency and course of disorders, the types of victims that will be most affected, and the most appropriate treatment for those disorders.

Acknowledgements

This work has been made possible in part by a research grant from the Ministry of Science, Innovation, and Universities of Spain (PGC2018-098387-B-I00).

References

American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Author.

Astill Wright, L., Sijbrandij, M., Sinnerton, R., Lewis, C., Roberts, N. P., & Bisson, J. I. (2019). Pharmacological prevention and early treatment of post-traumatic stress disorder and acute stress disorder: A systematic review and meta-analysis. *Translational Psychiatry, 9*, Article 334. http://dx.doi.org/10.1038/s41398-019-0673-5

Bonde, J. P., Utzon-Frank, N., Bertelsen, M., Borritz, M., Eller, N. H., Nordentoft, M., Olesen, K., Rod, N. H., & Rugulies, R. (2016). Risk of depressive disorder following disasters and military deployment: Systematic review with meta-analysis. *British Journal of Psychiatry, 208*(4), 330-336. http://dx.doi.org/10.1192/bjp.bp.114.157859

Brewin, C. R., Andrews, B., & Valentine, J. D. (2000). Metaanalysis of risk factors for posttraumatic stress disorder in traumaexposed adults. *Journal of Consulting and Clinical Psychology, 68*(5), 748-766. http://dx.doi.org/10.1037/0022-006X.68.5.748

Calleja, J. M. (2006). *Algo habrá hecho: odio, muerte y miedo en Euskadi* [He/she must have done something: Hatred, death, and fear in Euskadi]. Espasa Calpe.

Canino, G., Shrout, P. E., Rubio-Stipec, M., Bird, H. R., Bravo, M., Ramírez, R., Chavez, L., Alegría, M., Bauermeister, J. J., Hohmann, A., Ribera, J., García, P., & Martínez-Taboas, A. (2004). The DSM-IV rates of child and adolescent disorders in Puerto Rico: Prevalence, correlates, service use, and the effects of impairment. *Archives of General Psychiatry, 61*(1), 85-93. http://dx.doi.org/10.1001/archpsyc.61.1.85

Cobos Redondo, B. (2020). *Seguimiento a muy largo plazo de la efectividad de la terapia cognitivo-conductual centrada en el trauma en víctimas de terrorismo en España* [Very long-term folow-up of the effectiveness of trauma-focused cognitive-behavioral therapy in victims of terrorism in Spain] (Doctoral dissertation, Universidad Complutense de Madrid). https://eprints.ucm.es/

DiMaggio, C., Galea, S., & Li, G. (2009). Substance use and misuse in the aftermath of terrorism. A Bayesian meta-analysis. *Addiction, 104*(6), 894-904. http://dx.doi.org/10.1111/j.1360-0443.2009.02526.x

García-Vera, M. P., Moreno, N., Sanz, J., Gutiérrez, S., Gesteira, C., Zapardiel, A., & Marotta-Walters, S. (2015). Eficacia y utilidad clínica de los tratamientos para las víctimas adultas de atentados terroristas: una revisión sistemática [Efficacy and effectiveness of treatments for adult victims of terrorist attacks: A systematic review]. *Behavioral Psychology/Psicología Conductual, 23*(2), 215-244.

García-Vera, M. P., & Sanz, J. (2010). Trastornos depresivos y de ansiedad tras atentados terroristas: una revisión de la literatura empírica [Depressive and anxiety disorders after terrorist attacks: A review of the empirical literature]. *Psicopatología Clínica, Legal y Forense, 10*, 129-148.

García-Vera, M. P., & Sanz, J. (2016). Repercusiones psicopatológicas de los atentados terroristas en las víctimas adultas y su tratamiento: estado de la cuestión [Psychopathological consequences of terrorist attacks in adult victims and their treatment: State of question]. *Papeles del Psicólogo, 37*(3), 198-204.

García-Vera, M. P., Sanz, J., & Gutiérrez, S. (2016). A systematic review of the literature on posttraumatic stress disorder in victims of terrorist attacks. *Psychological Reports, 119*(1), 328-359. http://dx.doi.org/10.1177/0033294116658243

Gesteira, C., García-Vera, M. P., & Sanz, J. (2018). Porque el tiempo no lo cura todo: eficacia de la terapia cognitivo-conductual centrada en el trauma para el estrés postraumático a muy largo plazo en víctimas de terrorismo [Because time does not heal all wounds: Efficacy of trauma-focused cognitive behavioral therapy for very long-term posttraumatic stress in victims of terrorism]. *Clínica y Salud, 29*(1), 9-13. http://dx.doi.org/10.5093/clysa2018a3

Gutiérrez, S., Sanz, J., García-Vera, M. P., Gesteira, C., & Morán, N. (2020). *Time does not heal all wounds: Prevalence of mental disorders in victims of terrorism six to 39 years after attacks* [Manuscript submitted for publication]. Faculty of Psychology, Complutense University of Madrid.

Haro, J. M., Palacín, C., Vilagut, G., Martínez, M., Bernal, M., Luque, I., Codony, M., Dolz, M., Alonso, J., & el Grupo ESEMeD-España. (2006). Prevalencia de los trastornos mentales y factores asociados: resultados del estudio ESEMeD-España [Prevalence of mental disorders and associated factors: Results of the ESEMeD-Spain study]. *Medicina Clínica, 126*(12), 445-451. http://dx.doi.org/10.1157/13086324

Harville, E. W., Xiong, X., & Buekens, P. (2010). Disasters and perinatal health: A systematic review. *Obstetrical and Gynecological Survey, 65*(11), 713-728. http://dx.doi.org/10.1097/OGX.0b013e31820eddbe

Haugen, P. T., Evces, M., & Weiss, D. S. (2012). Treating posttraumatic stress disorder in first responders: A systematic review. *Clinical Psychology Review, 32*(5), 370-380. http://dx.doi.org/10.1016/j.cpr.2012.04.001

Hobfoll, S. E., Dunahoo, C. A., & Monnier, J. (1995). Conservation of resources and traumatic stress. In J. R. Freedy & S. E. Hobfoll (Eds.), *Traumatic stress: From theory to practice* (pp. 29-47). Plenum Press. http://dx.doi.org/10.1007/978-1-4899-1076-9_2

Institute for Economics & Peace (2020). *Global terrorism index 2020. Measuring the impact of terrorism*. https://visionofhumanity.org

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

Kessler, R. C., Avenevoli, S., Costello, J., Green, J. G., Gruber, M. J., McLaughlin, K. A., Petukhova, M., Sampson, N. A., Zaslavsky, A. M., & Merikangas, K. R. (2012). Severity of 12-month DSM-IV disorders in the National Comorbidity Survey Replication Adolescent Supplement. *Archives of General Psychiatry, 69*(4), 381-389. http://dx.doi.org/10.1001/archgenpsychiatry.2011.1603

Kessler, R. C., Chiu, W. T., Demler, O., & Walters, E. E. (2005). Prevalence, severity, and comorbidity of twelve-month DSM-IV disorders in the National Comorbidity Survey Replication (NCS-R). *Archives of General Psychiatry, 62*(6), 617-627. http://dx.doi.org/10.1001/archpsyc.62.6.617

Liu, B., Tarigan, L. H., Bromet, E. J., & Kim, H. (2014). World Trade Center disaster exposure-related probable posttraumatic stress disorder among responders and civilians: A meta-analysis. *PloS ONE, 9*(7), Article 10. http://dx.doi.org/10.1371/journal.pone.0101491

López Romo, R. (2015). *Informe Foronda. Los contextos históricos del terrorismo en el País Vasco y la consideración social de sus víctimas 1968-2010* [Foronda Report. The historical contexts of terrorism in the Basque Country and the social consideration of its victims 1968-2010]. Instituto de Historia Social Valentín de Foronda, Universidad del País Vasco.

Lowell, A., Suárez-Jiménez, B., Helpman, L., Zhu, X., Durosky, A., Hilburn, A., Schneier, F., Gross, R., & Neria, Y. (2018). 9/11-related PTSD among highly exposed populations: A systematic review 15 years after the attack. *Psychological Medicine, 48*(4), 537-553. http://dx.doi.org/10.1017/S0033291717002033

Lundorff, M., Holmgren, H., Zachariae, R., Farver-Vestergaard, I., & O'Connor, M. (2017). Prevalence of prolonged grief disorder in adult bereavement: A systematic review and meta-analysis. *Journal of Affective Disorders, 212*, 138-149. http://dx.doi.org/10.1016/j.jad.2017.01.030

Martín-Peña, J. (2013). Amenazados de ETA en Euskadi: una aproximación al estudio científico de su victimación [Threatened by ETA in Euskadi: An approach to the scientific study of its victimization]. *Eguzkilore, 27*, 95-117.

Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & PRISMA Group (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *BMJ, 339*. http://dx.doi.org/10.1136/bmj.b2535

Moreno, N., Sanz, J., García-Vera, M. P., Gesteira, C., Gutiérrez, S., Zapardiel, A., Cobos, B., & Marotta-Walters, S. (2019). Effectiveness of trauma-focused cognitive behavioral therapy for terrorism victims with very long-term emotional disorders. *Psicothema, 31*(4), 400-406. http://dx.doi.org/10.7334/psicothema2018.165

National Consortium for the Study of Terrorism and Responses to Terrorism (START) (2020). *Global terrorism overview: Terrorism in 2019*. https://www.start.umd.edu/pubs/START_GTD_GlobalTerrorismOverview2019_July2020.pdf

National Institute of Mental Health (2002). *Mental health and mass violence: Evidence-based early psychological intervention for victims/ survivors of mass violence. A workshop to reach consensus on best practices*. U.S. Government Printing Office.

Neria, Y., DiGrande, L., & Adams, B. G. (2011). Posttraumatic stress disorder following the September 11, 2001, terrorist attacks: A review of the literature among highly exposed populations. *American Psychologist, 66*(6), 429-446. http://dx.doi.org/10.1037/a0024791

Ozer, E. J., Best, S. R., Lipsey, T. L., & Weiss, D. S. (2008). Predictors of posttraumatic stress disorder and symptoms in adults: A meta-analysis. *Psychological Trauma: Theory, Research, Practice, and Policy, S*(1), 3-36. http://dx.doi.org/10.1037/1942-9681.S.1.3

Perlman, S. E., Friedman, S., Galea, S., Nair, H. P., Erős-Sarnyai, M., Stellman, S. D., Hon, J., & Greene, C. M. (2011). Short-term and medium-term health effects of 9/11. *The Lancet, 378*(9794), 925-934. http://dx.doi.org/10.1016/S0140-6736(11)60967-7

Pfefferbaum, B., Newman, E., Nelson, S. D., Nitiéma Pascal, Pfefferbaum, R. L., & Ambreen, R. (2014). Disaster media coverage and psychological outcomes: Descriptive findings in the extant research. *Current Psychiatry Reports, 16*(9). http://dx.doi.org/10.1007/s11920-014-0464-x

Roberts, N. P., Kitchiner, N. J., Kenardy, J., Lewis, C. E., & Bisson, J. I. (2019). Early psychological intervention following recent trauma: A systematic review and meta-analysis. *European Journal of Psychotraumatology, 10*(1). http://dx.doi.org/10.1080/20008198.2019.1695486

Salguero, J. M., Fernández-Berrocal, P., Iruarrizaga, I., Cano-Vindel, A., & Galea, S. (2011). Major depressive disorder following terrorist attacks: A systematic review of prevalence, course and correlates. *BMC Psychiatry, 11*(96). http://dx.doi.org/10.1186/1471-244X-11-96

Sanz, J., & García-Vera, M. P. (2021). Mental health consequences of terrorist attacks in adults. In P. Graf & D. J. A. Dozois (Eds.), *Handbook on the state of the art in applied psychology* (pp. 207-237). Wiley.

Sanz, J., Cobos, B., Fausor, R., Liébana, S., Sánchez-Marqueses, J. M., Jiménez, A., Sanz-García, A., & García-Vera, M. P. (2020). Una revisión sistemática sobre la prevalencia del duelo complicado en víctimas adultas del terrorismo [A systematic review on the prevalence of complicated grief in adult victims of terrorism]. *Psicopatología Clínica, Legal y Forense*.

Shalev, A. Y., Freedman, S., Peri, T., Brandes, D., Sahar, T., Orr, S. P., & Pitman, R. K. (1998). Prospective study of posttraumatic stress disorder and depression following trauma. *The American Journal of Psychiatry, 155*(5), 630-637. http://dx.doi.org/10.1176/ajp.155.5.630

Shalev, A. Y., Ankri, Y. L. E., Israeli-Shalev, Y., Peleg, T., Adessky, R. S., & Freedman, S. A. (2012). Prevention of posttraumatic stress disorder by early treatment: Results from the Jerusalem Trauma Outreach and Prevention Study. *Archives of General Psychiatry, 69*(2), 166-176. http://dx.doi.org/10.1001/archgenpsychiatry.2011.127

Shalev, A. Y., Gevonden, M., Ratanatharathorn, A., Laska, E., van der Mei, Willem F., Qi, W., Lowe, S., Lai, B. S., Bryant, R. A., Delahanty, D., Matsuoka, Y. J., Olff, M., Schnyder, U., Seedat, S., deRoon-Cassini, T. A., Kessler, R. C., & Koenen, K. C. (2019). Estimating the risk of PTSD in recent trauma survivors: Results of the International Consortium to Predict PTSD (ICPP). *World Psychiatry, 18*(1), 77-87. http://dx.doi.org/10.1002/wps.20608

Slone, M., & Mann, S. (2016). Effects of war, terrorism and armed conflict on young children: A systematic review. *Child Psychiatry and Human Development, 47*(6), 950-965. http://dx.doi.org/10.1007/s10578-016-0626-7

Smith, E. C., Holmes, L., & Burkle, F. M. (2019). The physical and mental health challenges experienced by 9/11 first responders and recovery workers: A review of the literature. *Prehospital and Disaster Medicine, 34*(6), 625-631. http://dx.doi.org/10.1017/S1049023X19004989

Stellman, J. M., Smith, R. P., Katz, C. L., Sharma, V., Charney, D. S., Herbert, R., Moline, J. M., Luft, B. J., Markowitz, S., Udasin, I. G., Harrison, D. J., Baron, S. L., Landrigan, P. J., Levin, S. M., & Southwick, S. M. (2008). Enduring mental health morbidity and social function impairment in World Trade Center rescue, recovery and cleanup workers: The psychological dimension of an environmental health disaster. *Environmental Health Perspectives, 116*(9), 1248-1253. http://dx.doi.org/10.1289/ehp.11164

The ESEMeD/MHEDEA 2000 Investigators (2004). Prevalence of mental disorders in Europe: Results from the European study of the epidemiology of mental disorders (ESEMeD) project. *Acta Psychiatrica Scandinavica, 109*(Suppl. 420), 21-27. http://doi.org/10.1111/j.1600-0047.2004.00327.x

Wilson, L. C. (2015). A systematic review of probable posttraumatic stress disorder in first responders following man-made mass violence. *Psychiatry Research, 229*(1-2), 21-26. http://dx.doi.org/10.1016/j.psychres.2015.06.015

Zalta, A. K., Tirone, V., Orlowska, D., Blais, R. K., Lofgreen, A., Klassen, B., Held, P., Stevens, N. R., Adkins, E., & Dent, A. L. (2020). Examining moderators of the relationship between social support and self-reported PTSD symptoms: A meta-analysis. *Psychological Bulletin*, *147*(1), 33-54. http://dx.doi.org/10.1037/bul0000316