

## Terrorism and Depression: An Overview

Anne van Oorsouw

### Abstract

Terrorist attacks can have a profound impact on people who are exposed to them. In this article, one such possible effect, depression, is described, based upon an overview of a number of studies. Risk factors and immunizing factors are addressed. All these factors are divided into four subgroups: direct/indirect exposure; gender and ethnicity, psychological factors and coping and genes. In the discussion it is stated that the variety of factors makes it difficult to form a connected view of the co-effect of factors on a given individual. It is proposed that case studies be conducted to identify more clearly the actual causal factors.

**Keywords:** depression development, terrorism, terrorist attack, risk factors, immunizing factors.

### Introduction

During the past decade or so, terrorism seems to have become an increasing part of everyday reality. Terrorist attacks have become more spectacular and have ever greater media exposure, and thus a more profound impact on society. Because so many people are exposed to such attacks in one way or another, it is useful to clarify their possible effects on individuals. Besides physical injuries as a result of a bombing or a shooting, there are also many victims with psychological problems.

The most common psychological problems are development of mood disorders and anxiety disorders, for example generalized anxiety disorder (GAD) (Ghafoori and colleagues 2009). An even more common and frequently studied psychological disorder that might result from a terrorist attack is post-traumatic stress disorder (PTSD). Jonkhout (2012) for example, reports that exposure to a terrorist attack can actually lead to brain modification associated with the development of PTSD.

Besides PTSD, major depressive disorder is also a psychological problem that frequently results from exposure to a terrorist attack. Symptoms of this disorder include depressed mood, losing

pleasure in daily activities, fatigue, and concentration problems (American Psychiatric Association, 2010). There are many studies about depression following exposure to terrorism, and the goal of the present review is to provide an overview of all the factors that can lead to and protect against the development of a depressive disorder following a terrorist attack. Such an overview might prove useful for developing interventions.

### Risk and immunizing factors

Major depression as a result of a terrorist attack can be caused by many different factors. A review of the various studies reveals four different sets of factors, each with features that in some way have to do with an enhanced susceptibility to developing symptoms of a major depression. The different categories are direct/indirect exposure: gender and ethnicity psychological factors and coping, and genes. Because the focus of most of the studies was identifying risk factors for depression, there is less information about immunizing factors. However, absence of risk factors can be seen as protecting factors. In this overview, the most important protecting factors will be taken into account.

*Direct/indirect exposure*

There are different ways in which someone can be exposed to terrorist attacks or their consequences. Several studies pay attention to the effects of these different kinds of exposure. Miguel-Tobal et al. (2006) published a paper (based on a study by Galea (2002) about the 9/11 attacks) about the 2005 Madrid train attacks. In this study, they found that the train attacks were associated with depression among 10.4% of the participants. The study documents a significant difference in depressive symptoms between people who directly witnessed the train attacks in Madrid (17.5 %) and people who did not (7.5 %). Direct exposure can therefore be seen as a risk factor for depression, but the study also reports effects of mass bereavement, which can be seen as indirect exposure. For example, the attacks in Madrid led to “political turmoil” in Spanish politics, an indirect effect of the actual terrorist attack (Miguel-Tobal et. al., 2006).

Other researchers have shed light on the role of indirect exposure in the development of depressive symptoms. Studies for the most part identified the important effects of media exposure. Krastel and Margraf (2009) report an association between seeing or hearing footage of or about the WTC disaster and enhanced possibility of developing depression, as long as an individual is in a vulnerable position. This was even observed among subjects living in Switzerland, so it is once again an example of indirect exposure and its effects (Krastel & Margraf, 2009). The same association was found by Green (2011). She investigated the prevalence of depressive symptoms among students at a university in the southeastern USA, and found that levels of depressive symptoms within cohorts are significantly higher after the WTC disaster in 2001 than before the disaster.

The focus of the study conducted by Ahern et al. (2002) was on the influence of television images of the WTC disaster in New York on development of depressive symptoms. They showed participants four images that had something to do with the WTC attack. The image of people falling or jumping from the WTC towers was most closely associated with later depression. This association is, not surprisingly, stronger among people who were directly exposed to the attacks.

The last examples of indirect exposure are provided in the study of Canetti et al. (2010). Research among Palestinians revealed that loss of intra- and interpersonal resources linked to political violence (a form of terrorism) led to depressive symptoms. When people lose the feeling of a stable family because of political conflicts, this can be seen as an interpersonal resource loss. Losing the feeling that one has control over his or her life is an example of an intrapersonal resource loss.

According to the above examples, exposure to a terrorist attack can be direct (in the case of witnessing the attack) or indirect (e.g., exposure through media, mass bereavement, or loss of intra- and interpersonal resources). However, there are also cases in which exposure to a terrorist attack can take place because friends or family are involved. Galea and colleagues (2002) focused on this kind of exposure. Depressive symptoms are present twice as much among people who lost a friend or relative because of a terrorist attack (17.8 %) as among people who did not lose someone (8.7 %) (Galea et. al., 2002).

In summary, different kinds of exposure to a terrorist attack are predictors for developing depression. Direct exposure (e.g., witnessing an attack) is linked to enhanced depression

levels, but there are also many ways in which someone can be exposed to a terrorist attack without actually being there. Media influence and mass bereavement are examples, as is the victimization of friends or relatives.

However, the *absence* of any of these risk factors in effect functions as immunizing factors. For example, not directly witnessing an attack, or relatively little exposure to the media can help prevent someone from developing depression following a terrorist attack.

#### *Gender and ethnicity*

Gender is an important factor in the possible development of depressive symptoms following a terrorist attack. A number of studies took gender into account. Canetti et al. (2010) report a distinction between the ways men and women are affected by political violence. In their study, they researched depression levels among Palestinians, emphasizing differences between men and women. Their most important finding is that men are exposed to political violence in a different way than women. Men are more often involved in direct situations of political violence (e.g., demonstrations) than women, and this involvement is associated with higher depression levels compared to men who were not involved in such a situation. For women, more exposure to socio-political stressors (such as being forced to leave their home) are associated with higher depression levels. This effect has not been found among men. However, Canetti et al. (2010) also found similarities between depression predictors in men and women, namely the loss of intra- and interpersonal resources, as mentioned before. Thus, although there are differences between men and women in development of depressive symptoms, the most important predictor affects

both sexes indiscriminately (Canetti et al., 2010).

Galea and colleagues (2002) also found a distinction in depressive levels between men and women. According to their findings, female sex is a predictor for depression following a terrorist attack, but this predictor is influenced by, among other factors, level of social support.

Barile and colleagues (2011) showed a combined effect of gender and relational exposure to an attack. Girls acquainted with someone who was directly involved in a suicide bombing were more likely to have depressive symptoms than their male peers. So there is an interaction between female sex and relational exposure. According to the researchers, these differences in depression levels can be a result of different appraisals of stressful events by boys and girls. Girls identify “a stressful event more often as severe” (Barile et al., 2011, p.9), and are therefore more likely to develop depression because of the stress it causes them. An explanation for this effect only being found in relational exposure can be that women feel more sympathy for the victims, and therefore experience grief more deeply than men, and this can lead to depression (Barile et al., 2011).

The fact that female sex predicts depression following exposure leads to the conclusion that male sex can therefore be seen as an immunizing factor. However, neither male nor female sex is a predictor on its own. Levels of social support and certain kinds of exposure influence the effect of sex. But ethnicity might also play a role in whether someone develops depressive symptoms after exposure to a terrorist attack. Galea and colleagues (2002) found high depression levels in their study, especially among Hispanics, but suggest that higher levels of depressive symptoms are associated

with minorities in general. They believe that this can be explained by the fact that psychopathology is in general much more common among minorities, because of socio-cultural stressors that they face (Galea et al., 2002).

Thus far, it is clear that factors such as gender and ethnicity can in some way determine if someone is likely to develop depressive symptoms following exposure to a terrorist attack. It is obviously not possible to immunize individuals against such inherent characteristics of their being, although it is possible to treat depression (e.g. with psychotherapy). And it is also possible to develop primary and secondary interventions that take gender, as well as culture and ethnicity, into account.

#### *Psychological factor and coping*

Because depression is a psychological disorder, patients' internal psychological state is often evaluated in research studies. Many of the previously described studies took this into account and identified different sub-factors that can lead to higher probability of depression development following a terrorist attack. There are three subgroups: psychological states and thoughts during or soon after exposure to the attack; stressors in the years or months before the attack; and coping styles, including social support, and the role of certain genes in the development of depression.

Both Galea et al. (2002) and Miguel-Tobal et al. (2006) report a comparable association between having a panic attack during or soon after a terrorist attack and depressive symptoms. Both studies state that their results are consistent with findings from other studies (for example: Freedman, Brandes, Peri, & Shalev, 1999, in Miguel-Tobal et al., 2006), suggesting that panic attacks are often linked to depression. A feeling distinguishable from panic is fear of death or injury.

This feeling is on its own a predicting factor for depression. Victims that experienced fear of death or injury are twice as likely to have symptoms of depression (11.8 %) as victims without this feeling (5.8%). The effects of perceived loss of intra- and interpersonal resources previously discussed are two more examples of psychological influences that determine whether depression is likely to occur. The feelings of losing the stability in one's family or low self esteem as a result of a terrorist attack are examples that lead to an enhanced possibility of depression (Canetti, et. al., 2011).

So far, most factors that are directly linked to terrorist attacks have been taken into account. Exposure to life stressors during at least one year before the attack can, in combination with exposure to the attack, lead to enhanced depression levels as well. Miguel-Tobal et al. (2006) did find such associations, which are very strong. A combination of zero stressors in the year before the attack, and the attack itself led to depression in 5.7% of the cases, compared to 8.8% for one stressor and even 24.1% for two or more stressors (Miguel-Tobal et al., 2006).

It is important to note that none of these psychological influences exists on its own. Coping with particular kinds of psychological distress differs from person to person, and therefore influences the extent to which distress might lead to depression. It has already been noted that different kinds of appraisal of a terrorist attack can help determine whether depression is more likely to occur. Negative appraisal (mostly used by girls) is associated with higher depression levels than other kinds of appraisal (Barile et al., 2011). This seems to indicate that one's beliefs about an event are an important predictor of depression. One's beliefs about health in general, and the lifestyle attached to it, can either immunize

against or put someone at risk for depression. The study by Green (2011) investigated so-called “health locus of control beliefs” and found associations with depression levels. A high score on chance locus of control beliefs (e.g. believing that becoming ill is a matter of fate) is linked to higher depression levels than high scores on internal locus of control beliefs (e.g. believing that becoming ill is something you can avoid by lifestyle). Findings report an interaction between the internal locus of control belief and the chance locus of control belief and lowered depressive symptoms. A remarkable finding from this study is that people are best protected from depression after a terrorist attack when they believe they can influence their own health, *only* if their belief that health is influenced by fate or chance is relatively high as well (Green, 2011).

Social support is also an important predictive factor of depression for individuals exposed to a terrorist attack. Galea et al. (2002) and Miguel-Tobal et al. (2006) both report a significantly higher prevalence of depression among people with low levels of social support (15.5 %) than people with high levels of social support (5.6%) (Galea et. al., 2002).

Social support can also be seen as a protective factor. Shahar et al. (2009) researched the influence of social support on depression among adolescents before and after a suicide bombing. High levels of social support protected participants from developing depression in cases of event-related stress, while low levels of social support were associated with enhanced development of depression in comparable circumstances (Shahar et. al., 2009). This effect is the same as the one found in the studies by Galea et al. (2002) and Miguel-Tobal et al. (2006).

### *Genes*

In addition to all of the previously discussed psychological and social risk factors, there is one kind of risk factor that has not yet been addressed—genes. A study by Caspi et al. (2003) reported that persons with one or two short alleles of the 5-HTT genes are more vulnerable to life stressors and their effect on depression than people with two long alleles of this gene. A terrorist attack can therefore, in combination with this vulnerability, lead to enhanced risk of depression. On the other hand logically, under the same circumstances, people with the two long alleles would appear to be immunized against developing depression following a terrorist attack (Caspi et. al., 2003).

### **Conclusion**

In conclusion, the effects of a traumatic event such as 9/11 are quite varied. Besides victims with physical injuries, there is also a large group of victims with resulting psychological problems. The variety of psychological symptoms among people who were exposed to a traumatic event is large (GAD, PTSD) but one of the major disorders developed by victims after a terrorist attack is depression. There are different factors that can both lead to and protect against the development of depressive symptoms following terrorist attacks. The purpose of this article was to provide an overview of all the relevant factors that predict depression following exposure to terrorism. Four groups of risk and protective factors have been addressed: direct/indirect exposure; gender and ethnicity, psychological states and coping and genes, the third existing of three subgroups: psychological states and thoughts during or soon after exposure to the attack; stressors in the years or months before the attack; and coping styles, including social support, and the role of certain genes in depression development. There are many studies that investigated comparable factors (for example Miguel-

Tobal et al., 2006 and Galea et al., 2002). There are also many additional factors that can predict depression after a terrorist attack, but the four categories reviewed here provide a good overview.

### Discussion

Terrorism is often called “psychological warfare.” The current article shows that that statement is true. There are numerous and varied risk factors for developing depression following a terrorist attack. This article has been limited to a discussion of just a few of these factors in isolation. In reality, people exposed to terrorism can have combinations of factors that either increase or decrease the risk of their developing depression. In order to gain more comprehensive insight in this combining effect of different factors, it would be useful to do case studies with individuals exposed to a terrorist attack. The complex connection among the many factors might then be discovered. The more research about the co-effects of both risk and immunizing factors, the better for developing possible interventions. In addition, there also seems to be a kind of nature-nurture contrast in studying depression following a terrorist attack. Almost every study discussed focused on psychological or social effects. An exception is that of Caspi et al. (2003) that reported a significant interaction between certain genes and life stressors. In this connection, another suggestion for future study is to connect these findings (nature) to the effects of psychological and social effects (nurture).

### Reflection

Depression is a subject that is frequently addressed in psychological research. As can be concluded from the current article, most of the factors relevant to depression concern psychological and social influences. It is therefore unlikely that disciplines other than psychology could shed important light on this topic. The influence of media might be interesting to

sociology specifically, or the social sciences in general. As explained above, media reporting about terrorist attacks (e.g., via television) can lead to depression even among people in countries other than that in which the attack took place. This effect is, of course, magnified when people are actually exposed to the attack (Ahern et. al., 2002). Sociology specifically, and the social sciences in general could possibly investigate whether something might be done concerning the disturbing and shocking presentation of news in the media. Is it really necessary to report every single shocking detail of terrorist attacks? Might it be possible to report about terrorism without provoking devastating effects on human mental health?

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