



Behavioral Responses in Youth Exposed to Natural Disasters and Political Conflict

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Abstract

Purpose of Review The aim of this review was to focus solely on youths' behavioral responses to natural disasters and political conflicts in order to fully understand their impact and scope.

Recent Findings Recent studies in the field of trauma have shown that theoretical conceptions have moved away from a narrow focus on the individual and towards wider ecological perspectives and from a narrow focus on negative responses to trauma exposure towards positive prosocial responses. Although there is a distinction between youths' behavioral responses towards natural disasters vs. towards political conflicts, in both of these adverse situations, behavioral responses exist alongside emotional responses.

Summary Adolescents exposed to either type of adverse scenario are often able to turn their negative experiences into positive ones, take greater responsibility for themselves and others, contribute to recovery processes, and engage in prosocial behaviors. These responses must be investigated in the context of the trauma field's recent understandings regarding psychological, biological, environmental, and cultural factors.

Keywords Adolescents · Behavioral responses · Conduct problems · Natural disasters · Political conflict · Youth

Introduction

It is widely known that exposure to traumatic events such as natural disasters and political conflicts—including war and terror—have profound implications for youth (between the ages of 15 and 24, according to the UN definition of “youth”). This period, a significant portion of which is also referred to as adolescence, is a crucial time in the transition to adulthood for social, biological, and cognitive development [1•]. These developmental changes give rise to intra- and interpersonal stresses and to adolescents' testing of boundaries, dependency versus separation issues, and difficulties in regulating emotional responses. As a

result, this population is thought to be highly vulnerable to developing a range of internal and external responses, psychological symptoms, and emotional and behavioral problems [2]. Although a variety of negative responses can result from traumatic event exposure, the negative responses that have been most thoroughly investigated and documented in the literature are posttraumatic stress symptoms (PTSS) and posttraumatic stress disorder (PTSD) [3••]. There is considerably less knowledge about resultant behavioral dysfunctions such as substance use [4, 5], behavioral problems in school such as school violence [6••], and behavioral problems in adolescents' social environments [3••]. In the same vein, concepts regarding positive emotional responses such as posttraumatic growth (PTG) (i.e., a positive aspect of being exposed to traumatic events) in the aftermath of either natural disasters or political violence have been far more extensively covered than positive *behavioral* responses such as prosocial behavior or community involvement [7•].

Given that there is already such a large and well-established body of knowledge on emotional/mental health responses to traumatic events, it is important to

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focus solely on behavioral responses, in order to fully understand their impact and scope as well. Accordingly, this review sought to answer the following questions:

1. What do we know about behavior and conduct problems in youth exposed to natural disasters or political conflict?
2. What are the micro, mezzo, and macro predictors and/or risk factors related to the behavior and conduct problems among youth following a natural disaster or a political conflict?
3. What is the relationship between emotional (posttraumatic stress) responses and behavioral responses among youth following a natural disaster versus a political conflict?
4. What are the positive behavioral outcomes following a natural disaster or political conflict?
5. What steps should be taken for future research on youth behavior and conduct problems following a natural disaster or political conflict?

Theoretical and Empirical Framework: Behavior and Conduct Problems Among Youth Exposed to Natural Disasters or Political Conflict

Behavioral responses and conduct problems include a range of internalizing and externalizing responses. Among them are depression and anxiety, as well as aggression, disruptive behavior, and conduct problems including antisocial behaviors, risk-taking, and substance, tobacco, and alcohol use [8]. Aggressive, defiant, and/or rule-breaking behavior; delinquency; and oppositional defiant disorders (ODD), such as hostile behavior towards authority figures, are seen frequently in adolescents. These oppositional behaviors reflect the adolescents being situated between two worlds, the world of childhood and adulthood, and their need to position themselves in the world of their peers. As such, many of these behaviors can be seen as normative; the adolescents “are choosing” to adopt extremist behaviors (meaning that flirting with extremism, during adolescence, can be seen as normative) such as bullying, cyber violence, and other aggressive and antisocial behaviors [9]. When looking at adolescents’ behavioral responses to traumatic exposure, it is important to tease apart those behaviors that typify normative adolescent development from those behaviors that result uniquely from exposure to external traumatic events (war and terror or natural disasters).

It is important to point out that over the last decade, the conceptual frameworks for research on youth exposed to external traumatic events have reflected a broad shift in contemporary developmental science towards developmental systems

theory, particularly as this shift has been articulated in models of risk and resilience [10] and developmental psychopathology [11•]. These approaches integrate ideas from ecological systems theory [12], biology [13], and family systems theory [14], as well as developmental psychopathology and resilience science. As such, it is important to view the fallout from such external traumatic events with a wider lens in order to see how not only the individual is affected but the community as well. These events are, in fact, defined as communal and/or national and community events.

Specifically, when looking at adolescent responses to trauma, socio-ecological aspects such as the influence of parent, family, school, community, and national responses must be taken into account [6•, 15, 16•]. The concept of “shared trauma”—the idea that individuals, families, and communities jointly and simultaneously undergo these traumas, either to pathological or salutogenic effect—should also be interwoven [17, 18].

Another component that must be taken into consideration when looking at adolescents, or any other population, is the length of the exposure: that is, whether the traumatic event is a one-time, time-limited event; whether it is an ongoing event, giving rise to continuous traumatic stress (CTS) [19]; or whether there are double or cumulative events involved [20]. The effects of war, terror, and natural disasters usually continue over a long period of time and include post-disaster or post-terror/war periods of recovery and return to routine [21, 22].

Other factors that must be taken into consideration are the intensity of the event and the individual’s proximity to it: that is, whether the individual experienced direct or indirect exposure [6•, 16•]. Additional related concepts include secondary exposure [23], intergenerational transmission of trauma [24], and media exposure, which has been found to increase negative responses [25].

There are, in addition, several concepts that stress adolescents’ positive responses to traumatic exposure, including posttraumatic growth and resilience, and prosocial behavior such as social activism and leadership [26•, 27], secondary positive responses [28], and even shared resilience in traumatic situations [29]. As such, each of the next sections will relate to the negative and positive aspects of youths’ behaviors as a result of their exposure to external traumatic events.

Natural Disasters and Adolescents’ Behavioral Reactions: Negative and Positive

A natural disaster is a major adverse event resulting from the earth’s natural processes; among these disasters are wildfires, floods, hurricanes, tornadoes, volcanic eruptions, earthquakes, tsunamis, and other geologic processes. A natural disaster can cause loss of life and/or destroy property and typically leaves economic damage in its wake, the severity of which depends

on the affected population's resilience and ability to recover, as well as on the infrastructure available. Natural disasters can have long-term effects on a variety of locales—such as homes, schools, and playgrounds—that form the backbone of children's/adolescents' individual and social development. Damage to or loss of these basic infrastructures can lead to biopsychosocial, physical, cognitive, and social development effects and can increase the risk for internalizing behavior problems in youth including PTSS, depression, and anxiety (e.g., [30] and can co-occur with a range of externalizing behavioral responses and problems including aggression, disruptive behavior, conduct problems [31], and substance use [5].

The literature has helped to identify factors which predict internalizing and externalizing behavioral responses and conduct problems that result from exposure to natural disasters. The most important factor seems to be age/developmental stage; that is, adolescents are more likely to develop internalizing and externalizing symptoms following disaster exposure than young children [32]. Gender has also been found to be an important variable. Specifically, girls tend to respond by experiencing/displaying emotional distress, whereas boys tend to respond in more external ways, such as by being aggressive and by developing extreme behaviors including using violence against girls and female adolescents, as has been found in shared community trauma situations such as natural disasters [33].

In addition, adolescents have been shown to experience "secondary exposure" via their parents' stress reactions. For example, 3 years post-Hurricane Katrina, mothers who reported significant hurricane-related distress reported more externalizing problems, such as impulsivity, in their adolescent children than mothers who had reported less hurricane-related distress [34]. It is important to emphasize that these problems may appear months or years later, rather than directly after the disaster occurs [32].

Place attachment and sense of belonging have also been found to be critical predictors of behavioral responses, as the damage done to important social-physical environments in their lives subverts the cognitive-affective bonds that individuals develop with these personally meaningful environments [22]. Place ties become more prominent in adolescence because young people select and patronize specific and/or favorite places, many of which are situated some distance away from the family environment. Adolescents use these favorite places for the purposes of cognitive restoration and emotion regulation; they seek them out to maintain self-esteem, socialize with peers, and further develop self-concepts [35].

Natural disasters can also result in forced evacuation, an additional aspect to be explored vis a vis resultant behavioral problems among adolescents. For example, in a post-Katrina study, displaced youth reported that they often experienced a "missing home stage," in which they expressed sadness, loneliness, and a strong desire to

return home [36]. Other research has highlighted the difficulty of returning to one's community after a disaster. For example, after the wildfires of 2011, youth who returned to Slave Lake, Alberta, Canada, expressed how the physical changes to their homes and the surrounding forest landscape evoked a sense of disorientation and sadness [37••]. Other studies have revealed the deleterious effects of disaster-related displacement on youths' health and well-being, such as asthma, depression, decreased academic performance, drug use, and PTSD [38].

At the same time, some studies in the trauma field have focused on the positive outcomes of exposure to natural disasters. For example, research findings have shown prosocial behavior [39], increased sense of community (e.g., [40], greater place attachment [22], posttraumatic growth [26••], future hope and resilience [41], and youth involvement and social activism [42]. Nevertheless, the idea that "good" can come from "bad"—i.e., positive outcomes can result from traumatic exposure—has not received enough research attention, despite the growing evidence of young people's resilience after natural disasters [22]. These positive findings may, to some extent, be understood in light of the idea that adolescence represents a period of transition between the dependence of childhood and the independence of adulthood, alongside a growing awareness of one's interdependence with others, as a member of a community.

Research findings have attested to youths' great capacity for recovery and resilience. Many youths have benefited from places that provided them with short- or long-term reprieves from the chaotic disaster environment, offered them opportunities to contribute to recovery efforts, addressed their physical and psychological needs, and symbolized resilience, renewal, or hope [41]. Research findings have also shown that after a disaster, young people often possess a desire and capacity to contribute to the recovery of their families and communities [43••]. Their involvement allows them to safely contribute to the disaster recovery process, and substantial immersion in place is thought to further support a sense of belonging, identity, and well-being [44].

Political Conflict and Adolescents' Behavioral Reactions: Negative and Positive

The period of adolescence, a unique period in many ways, entails complex reactions to war and terrorism. On the one hand, the ability for abstract thought, reflection, and analysis enable youth to predict the potential outcomes of dangerous situations, evaluate alternative viewpoints of the event, respond proactively, and experience empathy for others. On the other hand, the rapid physiological, cognitive, social, and emotional transitions characteristic of adolescence can result in increased negative affect and insufficient resources to

regulate emotions; they can also precipitate greater vulnerability in traumatic situations and in periods of war, conflict, and terrorism [6••].

Socio-political conflicts—mainly war and terror events—are man-made traumas that are embedded within strong collective ideological networks of meaning. In the case of war and terrorism, the unpredictable nature of the danger and the nebulous profile of the “enemy” introduce a high degree of uncertainty that may further decrease individuals’ sense of safety, and the fundamental inhumanity of these events may shatter individuals’ basic trust, giving rise to fear of harm or death and the possibility of being the target of a future traumatic event [45].

Research findings have shown a variety of long-term negative behavioral responses as a result of exposure to war and terror. For example, in a study regarding the ongoing political conflict in Sierra Leone, findings showed that the affected youth who continued to suffer elevated levels of distress and impairment in the post-conflict environment were at risk for poor health and development, low rates of school completion, and poor economic self-sufficiency [46]. In another study conducted among youth after the September 11th terror attack in the USA, findings showed increased negative stereotyping, discrimination, and marginalization, constructs which challenge youths’ identity negotiation processes [47].

Other studies have found that in an ongoing conflict situation, such as that which exists between Israel and the Palestinians, also termed an ethno-political conflict [48], there is a tendency among youth to perpetuate the conflict by creating a cognitive basis for the hostility and mistrust between groups and to create clear lines between the in-group and the “other” [49]. Furthermore, exposure to protracted ethno-political violence appears to be associated with higher levels of aggressive behavior, as found by Boxer and Sloan-Power (2013) [55], among Belfast youth, and might also be linked to emotional desensitization. Emotional desensitization refers to the gradual process in which individuals show less emotional distress over time, despite consistent exposure to violence. Both aggression and desensitization have been found to be factors that can impact social-cognitive beliefs about ethnic out-groups [48].

Increased aggressive behavior was, indeed, found among Israeli youth who reacted to political unrest with more school violence and victimization [6••], among war-affected Sierra Leonean youth [50], and among youth in Northern Ireland, who responded to their situation with delinquent behaviors [11•]. In addition, youths who reported higher levels of aggressive behavior were more likely to be boys in their late teens [6••]. Although boys enacted more acts of aggression than girls, the average decline in behavioral responses of aggression was the same across gender [2].

These aggressive behaviors are likely to be sectarian and antisocial, given that, intentionally or unintentionally, youth

tend to reproduce intergroup conflict [2]. Exposure to socio-political violence has also been found to be related to adolescents’ use of extreme behavior and the development of radical attitudes and/or behaviors towards ethnic others, outgroups, or the societies of these outgroups as a whole [48].

Despite the abovementioned negative responses, many youths who are exposed to toxic environments do not necessarily display clinical symptoms or disorders and, to the contrary, may even show high levels of resilience and prosocial behavior [51]. The findings of Frazier et al. [27] indicate that trauma exposure is positively associated with engaging in prosocial behavior, such as involvement in volunteering activities. There is a debate in the literature as to how to relate to these positive attitudes and abilities: That is, do they reflect posttraumatic growth (PTG), recovery, and/or reduced stigma about being a victim [27]? Or do they reflect resilience stemming from a broad set of interactions between adolescents and their families/communities [52•]? Such systems in the lives of adolescents have been found to be facilitators of coping with fear and of reducing levels of psychological distress as well as levels of aggressive behaviors [16••, 53]. These findings highlight the important role that school and community systems can play in facilitating adolescents’ coping with exposure to continuous security threats and moderating distress reactions [16••], as described in ecological and trauma theories [54].

The Relationship Between Emotional (Posttraumatic Stress) Responses and Behavioral Responses in Youth Following Exposure to a Natural Disaster Versus a Political Conflict

There is a theoretical and empirical debate about the relationship between emotional (posttraumatic stress) responses and behavioral responses among youth following a natural disaster versus after a political conflict. One model—the distress pathway—suggests that experiences with violence promote negative coping and disrupt healthy emotional regulatory styles. As such, exposure to violence produces emotional distress, internalizing symptoms, PTS, and resultant externalizing difficulties characterized by behavioral problems [55]. The second model suggests a “normalization” or “socialization” pathway in which experiences with violence promote cognitive schemas depicting the world as a hostile place; these schemas can make the individual prone to adopt hostile-attributional biases and, accordingly, to enact negative behavioral responses [56••]. The third model offers an alternative pathway in which exposure to continuous political violence leads to changes both in emotional processes promoting aggression [57] and in the acquisition, through observational learning, of social cognitions that promote aggression [56••]. By contrast, other potential pathways include those in which

youth display resilience and engage in prosocial behaviors and civic engagement, such as political resistance, promoting peace, and community volunteering [58].

Several research findings have shown that anxiety may motivate an individual to act out via aggressive behaviors and conduct problems—both in natural disaster situations (e.g., [59]) as well as in contexts of war and terror [6••]. Exposure to either of these types of traumatic context may be more proximally linked to PTSD symptoms (than to behavioral problems) that, in turn, prompt aggression as part of a heightened activation of the anxiety and fear response system [6••, 60].

There is also evidence, however, supporting a direct link between externalizing problems (e.g., conduct problems, physical aggression) and exposure to either natural disasters [61•] or war and terror [6••]. In addition, adolescent survivors, simply by virtue of having survived, may feel free to shirk their obligation to adhere to normative frameworks and laws, as if their plight has given them the right to engage in antisocial behaviors [62].

Whether behavioral responses are mediated by distress or by positive growth, or whether they represent an alternative independent outcome of exposure to traumatic events, several studies have claimed that behavioral responses are simply a function of when they are measured. Youth peer aggression has been shown to be highly associated with the stress of exposure to natural disasters, and aggressive behavior exhibiting post-disaster may be more closely linked with PTSD symptoms than with disaster exposure itself [63, 64]. In terms of exposure to war and terror, the following factors have been found to play a role in direct as well as indirect relationships with behavioral as well as emotional responses: age (being an older adolescent), gender (being a boy), traumatic history (mainly being a girl), lower sense of belonging, lack of family support, and sense of fear [6••, 16••, 53].

Summary and Conclusions

The contribution that this article makes to the literature is to stress that behavioral responses are salient responses to being exposed to war, terror, and natural disaster. These behavioral responses can be positive or negative—just as emotional responses can be—and may, in fact, co-occur with emotional responses. Most important, the review sheds light on the theoretical changes that have occurred in the field: having gone from an individual to an ecological way of understanding human development in general and of understanding behavioral responses among adolescents in particular. These changes have been accompanied by a micro, mezzo, and macro understanding of how individuals deal with adversity as well as by research attesting to the existence of positive growth and resilience responses. This wider socio-ecological lens includes

relatively new conceptualizations in the trauma field such as “shared trauma” and “continuous traumatic stress,” constructs which signify the communal nature and long-term/ongoing aspects of natural disasters and political violence.

In addition, this review highlights the importance of differentiating between normative adolescent behaviors and behavioral responses which specifically reflect adolescents’ exposure to external traumatic events. It has also helped identify a great number of predictors of positive behavioral responses, in addition to the negative ones. Specifically, it seems that adolescents are often able to turn their negative experiences into positive ones by using the experiences they have personally undergone to feel more connected with and empathic to others, to take greater responsibility for the needy people in their midst, and to engage in better behaviors in general.

That said, some differences were in fact found regarding the way adolescents responded to situations of political violence versus the way they responded to natural disasters. Whereas activism and promoting sustainability seemed to characterize post-natural-disaster responses, radicalized views towards “the enemy” and fear of potential future traumatic events characterized post-terror event responses. One explanation for these findings, perhaps unsurprisingly, is that the environmental damage caused by the natural disaster galvanized adolescents to care more about their environment in general and specifically about how to reduce damage from the next natural disaster or to prevent it altogether. In contrast, the fear of death that results from war and terror exposure seems to reconstruct the conflict and enforce negative responses, creating an enemy either inside or outside the social matrix.

Regardless of these differences, there is much evidence indicating that both scenarios (i.e., exposure to natural disasters as well as to war/terror) can serve as the basis for positive behaviors, involvement in the community, and even the creation of future leaders. Other findings indicated that gender was a dominant predictor of behavioral responses (as has been previously shown vis a vis emotional responses) and that parental responses to the traumatic event also served to heavily influence adolescent responses. One implication of these findings is that the school can be a key player in a variety of ways: preparing students for disasters of all kinds and reducing their stress responses, promoting post-disaster/post-conflict return to routine, and promoting collaboration between micro, mezzo, and macro systems. In addition, it has been shown that such collaboration spurs post-adversity growth and resilience among individuals, families, and communities in general.

Before concluding, it is important to acknowledge the traumatic experiences of a growing segment of society worldwide: that is, of refugees, asylum seekers, and immigrants, and of all the relevant systems involved in aiding them (i.e., the host countries, etc.). The traumatic experiences of these populations need to be addressed separately.

Overall, the behavioral responses detailed in this review are very common responses to exposure to natural disaster and to political violence. As such, they should continue being researched in light of concepts such as “shared trauma” and “continuous traumatic stress” as well as being seen as alternatives, or adjuncts, to emotional responses. We must also deepen our understanding of what constitutes normative vs. pathological behavioral responses and conduct problems among adolescents. There is a particular lack of knowledge regarding how adolescents’ nascent world views can be influenced in a toxic way by exposure to political violence (war and terror), potentially leading to radicalized views and militaristic behaviors. This gap in our knowledge has serious implications, as these adolescents are our future leaders. Finally, the time has come to research these responses in the context of the trauma field’s wider and more recent understandings of psychological, biological, environmental, and cultural factors.

Compliance with Ethical Standards

Conflict of Interest The author declares no conflicts of interest.

Human and Animal Rights and Informed Consent This article does not contain any studies with human or animal subjects performed by any of the authors.

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