

The effects of trauma on children: working to define roles for mental health professionals

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Interest concerning the effects of trauma on the mental health of children has grown markedly during the past few years. At least three factors contribute to this growing concern.

First, studies in the basic sciences suggest that interactions between experiential and genetic factors during particular stages of development can exert long-term influences on a set of behaviours and physiological responses related to stress regulation (Meaney, 2001; Gross *et al*, 2002). Results from studies of people with various psychiatric conditions have begun to raise important questions concerning the degree to which similar developmental relationships arise in our species (Caspi *et al*, 2002; Heim & Nemeroff, 2002).

Second, advances in assessment and epidemiological methods have facilitated a series of prospective investigations of the sequelae of childhood trauma (Pine & Cohen, 2002). Studies in this area generate concerns over the high rates of trauma exposure and the strong associations with psychopathology.

Finally, particular interest in trauma follows in the wake of the recent terrorist attacks in the United States. As with data from other recent exposures of large groups of children to trauma, these events raise basic questions about the degree to which children may be particularly vulnerable to psychological harm following trauma (Laor *et al*, 1997; Schlenger *et al*, 2002; Thabet *et al*, 2002).

Given such concerns, recent reviews have considered in detail the data from children on levels of exposure to trauma, moderators of risk, effects on physiology and available treatments (Kaufman *et al*, 2000; Breslau, 2002; Pine & Cohen, 2002). The present article briefly summarises the conclusions from these prior reports, while emphasising three aspects of the available literature:

- the prevalence of trauma exposure, the nature of associated risks for psychopathology, and the factors most consistently shown to moderate outcomes
- the results of randomised controlled treatment trials that inform therapeutics in traumatised children
- strategies for minimising risk for psychopathology following trauma.

The nature of exposure

Heterogeneity in the nature of traumatic exposure, the contexts of exposures and the nature of psychopathology complicate efforts to draw firm conclusions on the risks of psychological sequelae in children. Reported prevalence rates of childhood trauma exposure generally exceed

20% in most studies of representative samples from industrial countries, and frequently exceed 50% in studies from countries or contexts associated with various forms of political unrest or social instability (which increase risks for trauma).

Children experience trauma through exposure to a diverse array of adverse events, including episodes of domestic violence, natural disasters and political unrest, each of which has been shown markedly to increase the risk of psychological problems (Breslau, 2002; Pine & Cohen, 2002). Key aspects of traumatic experiences vary widely across this array of events. It remains unclear whether conclusions can be drawn concerning a common set of risks and moderators of outcome that apply across diverse forms of trauma, such as domestic violence as well as political violence.

Some types of trauma have a particularly heightened risk for psychopathology. In general, across the full range of traumatic exposures, two factors most consistently moderate risk in prospective investigations: overall level of exposure and the degree of social support. Data on social support appear particularly informative, in that they suggest that children experience the greatest need for intervention when trauma – such as natural disasters, domestic violence or political unrest – occurs in the context of disrupted social support networks. Findings have emerged for other potential moderators, such as age at the time of exposure or level of pre-exposure psychopathology, but these remain only suggestive, as clear associations have not emerged in all studies.

Finally, studies of diverse traumatic events consistently find strong associations between trauma and psychopathology, but disagreement persists on the degree to which risk is elevated for one or another specific condition (Steinberg & Avenevoli 2000; Breslau, 2002). Some preliminary evidence suggests that risk for various conditions may meaningfully vary across age groups and contexts. For example, adolescents may be more likely than young children to manifest the constellation of symptoms that characterises post-traumatic stress disorder in adults. Nevertheless, strong evidence has not emerged of selectively elevated risk for specific conditions associated with specific forms of trauma or particular developmental periods; strong associations appear with a wide range of conditions, including various mood and anxiety disorders, as well as various behaviour disorders (Steinberg & Avenevoli, 2000; Breslau, 2002; Pine & Cohen, 2002).

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children exhibiting clearly impairing psychological problems following exposure to trauma should be assessed by mental health practitioners experienced in evaluating children with symptoms in multiple domains.

Therapeutics

Since traumatic experiences predispose to a diverse array of conditions, recent broad advances in treatment approaches for many paediatric mental disorders may address some essential questions on therapeutics. Specifically, recent large-scale randomised controlled trials (RCTs) for paediatric mood, anxiety and behaviour disorders have documented marked benefits for both psychopharmacological and psychotherapeutic interventions (Emslie & Mayes, 2001; Jensen *et al*, 2001; Research Unit on Pediatric Psychopharmacology Anxiety Study Group, 2001). In general, conclusions from these studies on the relative merits of various treatments for specific psychological problems can be applied to children exhibiting behaviour, mood or anxiety disorders within the context of trauma. Again, given the potential complexity of treatment decisions for children with comorbid problems following traumatic exposures, mental health practitioners play an invaluable role in using data from available studies to weigh the risks and benefits of particular treatments for particular children.

The psychological problems of traumatised children do clearly pose unique questions concerning therapeutics, necessitating studies that specifically examine the relative merits of interventions. Unfortunately, RCTs have examined the efficacy of only a narrow range of treatments applied in a narrow range of circumstances. Specifically, at least six studies document the efficacy of cognitive-behavioural therapy (CBT) for symptoms arising following sexual abuse, and one small study documents the benefits of imipramine for acute stress disorder following a severe burn (see Pine & Cohen, 2002). Major questions in other areas remain unanswered. For example, no RCT has examined the efficacy of selective serotonin reuptake inhibitors, which have been shown to benefit adults with post-traumatic stress disorder and children with a range of mood or anxiety disorders. In fact, no RCT has examined the efficacy of any treatment directed at specific mental disorders that arise following any form of trauma beyond sexual abuse. Given concerns with tricyclic antidepressant use among children and limitations in other areas of therapeutic research, the only current, generally accepted treatment recommendation specifically for traumatised children involves targeting anxiety symptoms with CBT in initial interventions (Pine & Cohen, 2002). Decisions on other interventions should be based on the larger literature on therapeutics of paediatric mental syndromes.

Minimising risk

Insufficient data exist to inform preventive interventions, either for specific children exposed to episodes of domestic abuse or for large groups of children exposed to massive acute traumas, such as the attacks on 11

September 2001. Ideally, firm recommendations will be based on data from randomised controlled prevention trials in similarly traumatised populations. Rising concerns both with the effects of domestic abuse and with the risk for future acts of terrorism may increase efforts to implement such prevention trials.

In the absence of such data, caution seems warranted, for a few reasons. Studies in traumatised adults suggest that potential preventive interventions can exert unanticipated deleterious effects (Rauch *et al*, 2001). Similarly, prevention studies among non-traumatised children also document the potential for deleterious effects from mass interventions. Specifically, lessons from past efforts to address rising adolescent suicide rates may be relevant. In this area, initial results suggested that strategies involving the identification and treatment of those children most in need may ultimately prove more beneficial than wide-scale, non-selective, population-based interventions (Shaffer & Craft, 1999). School-based or primary care settings may employ people with limited mental health expertise to identify those children most in need of assessments by mental health professionals. Data on moderators of risk from epidemiological studies of trauma exposure can be used to inform such case-finding strategies. Specifically, parents, educators and primary care physicians should be most concerned with children who either receive high levels of exposure to trauma or who are exposed to trauma within the context of marked disruption in social support. Efforts to prevent sequelae of trauma in children might consider the merits of working to identify such children and use insights from recent research on therapeutics of various paediatric mental syndromes to provide relief of emergent symptoms. Similarly, prevention efforts might consider the merits of interventions by parents, educators and primary care providers that either limit secondary exposure, for example through media exposures, or address social disruption following trauma.

Conclusions

In closing, concern with the psychiatric sequelae of trauma follows from diverse findings in both the scientific and lay press. Accumulating knowledge from epidemiological studies generates specific concerns over the degree to which recent widely publicised traumatic events might prove particularly harmful to the psychological well-being of children. Available data document the nature of such risks and factors that moderate outcomes. While advances in therapeutics provide insights for general treatment approaches, considerable research is needed on both therapeutics for and prevention of disorders that specifically arise following traumatic experiences.

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THEMATIC PAPER – TRAUMA AND THE MENTAL HEALTH OF CHILDREN

Impact of trauma on Palestinian children's mental health: lessons from the Gaza studies

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Children exposed to violence are at high risk of developing a range of mental health problems, predominantly post-traumatic stress disorder (PTSD) and depression (Yule, 1999). Children in war zones can be affected not only directly but also indirectly, for example through their basic health needs not being met, the loss of family members, disruption of social networks, internal displacement and their parents' responses.

Since the late 1990s, we have run a number of studies in the Gaza Strip, with Dr Abdel Aziz Thabet and his research team. Our initial study, after the end of the first intifada (uprising), established a high prevalence rate (41%) of post-traumatic stress reactions among children (aged 6–11 years) and their significant association with traumatic events experienced by the children, as well as with other behavioural and emotional problems (Thabet & Vostanis, 1999a). The trauma experienced included injuries, death or imprisonment of family, relatives or friends, as well as day and night raids.

When we re-interviewed these children ($n=234$) 1 year later, well after the Oslo agreement and the renewal of the peace process in the region, the prevalence rate of post-traumatic stress reactions had decreased to 10% (Thabet & Vostanis, 2000). The findings suggested that most reactions were acute and resolved in the absence of further conflict, but there were also a substantial number

of children who suffered chronic and resistant post-traumatic reactions, which could benefit from specialist treatment.

Palestinian children's mental health problems were compounded by their extreme adverse socio-economic circumstances, which is a common finding in research with children who are victims of political conflict. Most traumatic events occur in refugee camps in the West Bank and the Gaza Strip, where generations of children have been born for 55 years with little hope of escape. There has been a continuous growth of the population, which has now reached a density of 2300/km². Refugees make up 63% of the population, and 51% of refugees are under 15 years of age (Thabet & Vostanis, 1999b).

The second intifada (Al Aqsa) started in September 2000. Although we could not access all areas of the Gaza Strip to follow up the previous sample, we repeated the epidemiological study with a new cohort, and found that the prevalence rates of post-traumatic stress reactions had again risen dramatically, as a consequence of high exposure to new traumatic events. Children's emotional presentations were strongly correlated with maternal psychopathology (i.e. mothers' response to trauma) (Thabet et al, 2001). Traumatic events had changed since the previous conflict, with most children reporting watching pictures of mutilated bodies on television, and witnessing the bombing of people and houses.

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