

## Editorial

Social ecology interventions  
for post-traumatic stress disorder:  
what can we learn from child soldiers?†

Brandon Kohrt

**Summary**

Research with child soldiers is crucial to improving mental health services after war. This research also can illuminate innovative approaches to treating post-traumatic stress disorder (PTSD) among adult soldiers, veterans and other trauma survivors in high-income countries. A key

contribution is the role of social ecology for trauma-healing interventions.

**Declaration of interest**

None.

Brandon Kohrt is a medical anthropologist and psychiatrist participating in community-based interventions with child soldiers and other survivors of political violence in Asia and Africa.

**Similarities between soldiers from high-income countries and child soldiers**

In a longitudinal study of former child soldiers in Sierra Leone, Betancourt and colleagues find that post-traumatic stress disorder (PTSD) declined from 33% to 16% in a 4-year period in the absence of a targeted psychiatric intervention.<sup>1</sup> Over time, child soldiers' self-reports of family acceptance covaried with improvement in PTSD symptoms, and level of reported stigma covaried with worsening of symptoms. This association of psychiatric morbidity with family and community support and stigma is consistent with research findings for former child soldiers in other parts of Africa and Asia.<sup>2</sup> During post-conflict reintegration, child soldiers with self-reports of supportive families and communities endorse better mental health and psychosocial functioning than those reporting discrimination.

Betancourt *et al* and other researchers working with child soldiers interpret these findings in a social ecology framework.<sup>3</sup> Social ecology theories are characterised by a focus on the transactions between different levels that shape individual experiences ranging from direct interactions with family, peers and community, to larger social processes that shape interactions through government policies, economic systems, religion and other cultural practices.

Social ecology-based interventions have an established role in humanitarian settings because of the types of practitioners in these contexts, the groups funding humanitarian interventions, and dialogical practices with local communities.<sup>4</sup> Lessons learned from social ecology models of child soldiers' mental health provide alternative perspectives for PTSD interventions with adult soldiers and other trauma survivors in high-income countries. However, the joint advancement of social ecology-based interventions for both child soldiers and other trauma survivors has two limitations: (a) the popular conception that the experiences of child soldiers are incomparable with soldiers in high-income countries; and (b) the disconnect between social ecology theory and how it is applied in intervention research.

In contrast to popular culture portrayals of child soldiers, children associated with armed groups represent a heterogeneous population with some experiences not dissimilar from young adult soldiers in high-income countries. Child soldiers are assumed to have been abducted and forced to become combatants, whereas adult soldiers are assumed to have joined the military voluntarily. However, pathways to military association may be similar. Poverty, an aspect of one's position in social ecology, is a risk factor for military association in both Sierra Leone and high-income countries. A fertile climate for military enlistment in the UK has been described as a combination of patriotism and recession. Both child soldiers and soldiers from high-income countries identify access to education as one reason for military association. Half of child soldiers in Nepal reported joining voluntarily in pursuit of gender equality, education and escape from poverty.<sup>5</sup> 'Child' and 'adult' soldiers also may not vary significantly in age. Many youth identified by humanitarian agencies as child soldiers joined an armed group in their mid- to late teens. Yet, a 16-year-old who joins an armed group in Sierra Leone is labelled a child soldier, whereas a 17-year-old who enlists in the UK is not.

The importance of social ecology also overlaps between child and adult soldiers. Betancourt and colleagues' findings regarding family acceptance echo the association of homecoming reception and mental health among Vietnam veterans.<sup>6</sup> Efforts to promote positive reception have improved greatly for veterans of Iraq and Afghanistan conflicts. However, the high suicide rate in the USA points towards stressors across ecological levels. Home stressors associated with PTSD among UK soldiers, such as death of a loved one and problems with children,<sup>7</sup> are not dissimilar from stressors Betancourt and colleagues identified in Sierra Leone. Moving forward, it will be important to observe whether differences in social ecology influence long-term trajectories of PTSD among veterans in the USA, the UK, The Netherlands and Australia.

**Disconnect between social ecology theory and practice**

The second challenge to expansion of social ecology-based interventions for both child soldiers and other trauma survivors is

†See pp. 196–202, this issue.

the disconnect between social ecology theory and how the theory is operationalised in research and interventions. A common critique is that social ecology is measured simply as self-reports of social support or discrimination. Most intervention research, although acknowledging the importance of social ecology and social support, focuses on individual treatments. Despite the availability of interventions grounded in social ecology in humanitarian settings, the majority of intervention research in these contexts examines individually based PTSD treatments.<sup>4</sup>

This discrepancy also is observable in research and recommendations for PTSD treatment in high-income countries. Most PTSD treatment guidelines mention family, spirituality, creative healing and psychosocial rehabilitation. However, even these treatment modalities focus on the individual. The US Department of Veterans Affairs & Department of Defense's guidelines recommend promoting patient spirituality.<sup>8</sup> However, the recommendation is operationalised as one-to-one discussions with a chaplain, with little discussion of engagement with a religious community. The National Institute for Health and Care Excellence guidelines suggest that family members seek help for themselves,<sup>9</sup> but there is a lack of discussion about healing together as a family or community. The International Society for Traumatic Stress Studies (ISTSS) recommendation for psychosocial rehabilitation is an eight-session programme for the individual with PTSD rather than a joint process with employers and coworkers.<sup>8</sup> Ultimately, the ISTSS guidelines conclude that the vast majority of '[PTSD] treatments target the internal life of the individual' (p. 589).<sup>10</sup>

### Advancing social ecology in PTSD intervention research

Two shifts in current practice are needed to determine the utility of social ecology-based interventions. First, measurement needs to move beyond self-report to determine the influence of ecological levels on individual and group well-being. Second, more research is needed on interventions that target aspects of the social ecology beyond the individual.

To address the issue of measurement, multilevel models are one solution. If only individual self-report of social support is assessed, then it is difficult to disentangle the interpretation that social support determines psychiatric morbidity *v.* the opposite causal inference. Betancourt and colleagues suggest that the covariance of PTSD with family acceptance and stigma occurs because the latter ecological factors determine PTSD severity. In contrast, many adult models of PTSD emphasise the role of psychiatric symptoms in altering the social environment (e.g. PTSD leads to family and community relational difficulties).

Multilevel models in which data are collected at different levels can begin to clarify the role of social ecology. After the 2008 flood in Morpeth, England, individual PTSD was assessed in relation to social capital variables that were aggregated by postal codes.<sup>11</sup> High structural social capital measured at this ecological level had indirect effects on PTSD through coping and social support. In Nepal, district-level variables related to caste/ethnic composition, female literacy and conflict mortality associated with PTSD and other psychiatric outcomes among child soldiers.<sup>5</sup> In addition to multilevel models, more research is needed on enacted stigma, stigmatising attitudes and perpetration of discrimination, which can be measured at family, community and other ecological levels. Betancourt and colleagues' findings are an important first step, and they require further information such as enacted stigma and multilevel models to support the directionality in social ecology framing.

The second shift from current paradigms is the need for more research on social ecology interventions that target levels beyond the individual. Although it is more feasible to design trials at the individual level, there are precedents for implementing studies examining interventions incorporating couples, families, schools, neighbourhoods and policies. With such trials it is crucial to measure changes in the ecological system, for example, by measuring changes for families. Unfortunately, to date, most studies of couples and family-based interventions for veterans limit assessment to veterans' symptoms, and there is a dearth of information on well-being of spouses and children in these interventions.<sup>12</sup>

Targeting changes in well-being of others in the social ecology may be especially salient from both a military and cross-cultural perspective. Within military units – whether child or adult – there is often greater emphasis placed on assuring the well-being of others than individual well-being. This may translate into greater investment in change when child and adult soldiers view the objective of intervention as improving the lives of others in their families and communities. From a cross-cultural perspective, the social and relational aspects of trauma also can be more distressing than individual symptoms of PTSD. There is often a connection between social distress and post-traumatic psychosomatic complaints that resolve through community processes rather than solely through individual treatment. In Nepal, a third of symptoms on a local child-developed measure of traumatic distress were related to impaired ability to improve the well-being of others.<sup>13</sup>

Current research and interventions need to be complimented with multilevel designs and analyses. Betancourt and colleagues' finding of the association among PTSD, family acceptance and stigma is important to generate hypotheses regarding social ecology. A next step for the field will be to explore the social ecology hypotheses by assessing aspects of families, communities and political regions. Alongside social ecology-grounded epidemiological research, evaluation of social ecology-based interventions is essential. Social ecology, when theory is reflected in practice, has significant potential not only for informing interventions for child soldiers but also for adult soldiers and other survivors of trauma.

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## extra

### Maria I of Portugal: another royal psychiatric patient of Francis Willis

Timothy Peters and Clive Willis

After 'curing' George III of acute mania in 1788–1799, Francis Willis's (1718–1807) psychiatric practice was considerably enhanced and he was persuaded to go to Portugal to cure the reigning Queen Maria I (1734–1816) of her mental illness. Surprisingly little has been published of the cause, nature and outcome of her chronic mental illness, which similarly affected two of her three sisters.

The antecedents of the Portuguese monarchy were from the Hapsburg, Bourbon and Braganza dynasties. All had a high prevalence of consanguineous marriages, especially the Hapsburgs in the form of uncle–niece, aunt–nephew and cousin marriages and this probably contributed to the prevalence of mental and other illnesses in their families.

Maria became queen on the death of her father from a stroke in 1776 and reversed many of the changes wrought by Pombal. Apart from an isolated episode of delirium in 1781, her first symptoms of mental ill health occurred in 1788 following the deaths from smallpox of her elder son and of her daughter and husband and their infant son; Maria felt considerable guilt as she had opposed smallpox inoculation on religious grounds. She was also tormented by fear for her father's soul for his role in the executions ordered by Pombal.

Unfortunately, unlike for George III, there is only a single extant medical report on Maria's illnesses but the regular dispatches by the British Envoy Robert Walpole have provided much detailed information. Intermittent depression, manic episodes and anxiety led to her son acting as Regent from 1792, officially confirmed in 1799.

Maria and her sisters Mariana and Dorothea all met the criteria for major depressive disorder. The arrival of Francis Willis in March 1792 was greeted with optimism. He advised a policy of moral management (psychotherapy) and adequate nutrition rather than medication, and initial reports were encouraging. However, unlike his treatment of George III, his role was advisory rather than having full control of Maria's care. This proved unsatisfactory: his attempts to remove Maria from the pressures of court life, including a sea voyage, were unsuccessful as all her couriers and governmental officials insisted on accompanying her. He declared her incurable, advised continuing care by physicians from the University of Coimbra and departed for England in August some £16 000 wealthier.

Maria and her affected sister continued to be chronically mentally ill; Dorothea died aged 32 in 1771, but Maria and Mariana endured the transfer of the Portuguese court to Brazil in 1807, the result of the Napoleonic advance on Lisbon. They died in Rio de Janeiro aged 82 and 77, respectively.

Maria's regent and successor John VI suffered from bouts of melancholia and had a highly dysfunctional marriage. His two sons, Pedro and Miguel, returned to Lisbon and engaged in a major civil war against one another in the 1830s, which arguably fanned the flames of republicanism, with subsequent abolition of the monarchy in both Brazil (1889) and Portugal (1910).

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