

Daily stressors in the lives of Sri Lankan youth: a mixed methods approach to assessment in a context of war and natural disaster

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This paper describes the use of a mixed methods design to develop the Sri Lankan Children's Daily Stressor Scale (CDSS). It briefly describes its use in a study assessing the relative contribution of daily stressors on the one hand, and war and disaster exposure on the other, to young people's mental health and psychosocial wellbeing. The authors discuss the neglect of daily stressors; the stressful social and material conditions of everyday life in settings of armed conflict and natural disaster and offer a rationale for the importance of assessing daily stressors when seeking to understand and address mental health and psychosocial needs of conflict and disaster affected youth. A central focus of the paper is on the unique value of a mixed methods approach to contextually sound measure development.

Keywords: daily stressors, disaster, mixed methods, Sri Lanka, war

Introduction

Research on the mental health effects of armed conflict has been concerned primarily with assessing the impact of war related experiences of violence and loss, such as the disappearance or death of loved ones, the destruction of homes and belongings, and witnessing or experiencing physical assault. Implicit in this focus is an assumption that such experiences represent the most critical threats to mental health among survivors of organised violence. This assumption can

be illustrated graphically as a simple *direct effects* model, in which a straight line, with an arrow indicating direction of causality, is drawn from exposure to potentially traumatic war related events on the one hand, and mental health status, on the other.

There is little doubt that experiences of violence and loss in situations of armed conflict are related to heightened levels of psychological distress. Such distress has been most commonly measured using the language and constructs of Western psychiatry, in particular posttraumatic stress disorder (PTSD) and depression (Barenbaum, Ruchkin & Schwab-Stone, 2004; de Jong, 2002; Miller & Rasco, 2004). However, the link between war exposure and distress has also been found in studies using locally derived measures of (and constructs related to) mental health and psychosocial functioning (van Duijl, Nijenhuis, Komproe, Gernaat & de Jong, 2009; Fernando, 2008; Jenkins, 1996; Miller, Omidian, Qurashy, Nasiry, Quarshy, Nasiry, Karyar & Yaqubi, 2006). Although the strength of the relationship between exposure and distress has varied considerably across studies, there is by now sufficiently consistent evidence to consider the finding robust.

This is neither surprising nor particularly controversial. Indeed, it would be odd, and

in contradiction to both clinical and field experience, to suggest that living in a war zone is *not* highly distressing and, over time, a significant threat to psychological equilibrium. This does not mean that survivors of armed conflict are all traumatised or even that the majority of people living in war zones will develop any sort of enduring psychiatric disorder or functional disability. The lack of longitudinal data precludes such dire conclusions; moreover, research on resilience and recovery suggests that with adequate social support and the passing of time most people exposed to traumatic events have a remarkable capacity, often overlooked in clinical studies, for regaining their pretrauma level of functioning (Bonanno, 2004; Westphal & Bonanno, 2007). Our point is simply that, at least in the short term, exposure to the violence and destruction of armed conflict is associated with significantly elevated levels of distress.

It is important to note, however, that war does a great deal more than expose people to frightening and painful experiences of violence and loss. Armed conflict creates a host of highly stressful social and material conditions that colour the experience of daily life. For example, prolonged violence destroys social networks through the death or displacement of family members and friends, leaving people without access to much needed social support (Gorst-Unsworth & Goldenberg, 1998; Mels, Derluyn, & Broekaert, 2008; Miller & Rasco, 2004). War also destroys livelihoods, causing or worsening conditions of poverty and poverty related stressors, such as overcrowding and unsafe housing, and lack of access to water, food, and medical care (Inter-Agency Standing Committee (IASC), 2007). It displaces people into refugee camps that are typically impoverished and over-

crowded, often rife with disease, and generally afford few opportunities for education, or income generation (Desjarlais, Eisenberg, Good & Kleinman, 1995; IASC, 2007; Marsella, Bornemann, Ekblad & Orley, 1998). It may generate widespread mistrust between, and within, communities (Dawes, Tredoux & Feinstein, 1989; Martín Baró, 1989; Somasundaram, 2007). Additionally, it often creates large numbers of groups vulnerable to social marginalisation, such as widows, orphans, survivors of sexual assault, former child soldiers, and people with war related disabilities (IASC, 2007). By focusing narrowly on the mental health effects of direct exposure to war related instances of violence and loss, we may be overlooking significant sources of *ongoing* stress that affect mental health in conflict and post conflict settings.

A small but growing number of studies lend support to the importance of broadening the focus to include daily stressors. In fact, the available data suggest that stressful social conditions, or what are referred to in this paper as *'daily stressors'* may actually account for greater variance in mental health status than direct exposure to war related violence and loss. In a recent study of adults in the Afghan capital of Kabul, Miller, Omidian, Rasmussen, Yaqubi, Daudzai, Nasiri, Bakhtyari, Quraishi, Usmanhil & Sultani (2008) found that daily stressors such as poverty, unemployment, poor housing, health problems, and domestic violence accounted for greater variance in mental health status than war exposure, with the exception of PTSD, where daily stressors and war exposure were comparably strong contributors. In their study of refugees from Darfur in Chad, Rasmussen, Nguyen, Wilkinson, Vundla, Raghavan, Miller & Keller (in press) found that stressors related to the impoverished and physically dangerous

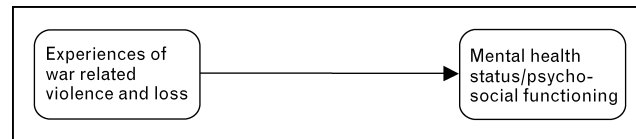


Figure 1: Direct effects model of relationship between exposure and mental health.

conditions in the camps were more strongly related to the refugees' mental health than the profound violence they had endured in Darfur. Also, in a recently completed study of war and disaster exposure, daily stressors, and mental health among youth in eastern Sri Lanka, daily stressors such as child abuse, inter-parental conflict, and material deprivation accounted for equal, or greater, variance relative to war and disaster exposure on most mental health variables, including PTSD and depression (Fernando, Miller, & Berger, in press). Additionally, in a recent study of Palestinian youth exposed to the violence of the Israeli occupation and the *intifada*, Al-Krenawi, Lev-Wiesel, & Schwail (2007), found that family violence, including parental violence towards children and sibling abuse, better predicted children's mental health than their exposure to the political violence in their communities.

In all of these studies, the stressful social and material conditions of everyday life that had been caused, or exacerbated, by armed conflict or natural disaster were strongly linked to participants' emotional

and psychosocial wellbeing. Clearly, in such settings a narrow focus on healing war-related posttrauma reactions would overlook critical sources of *ongoing* environmental stress that threaten people's mental health. Such findings are consistent with recent studies of refugees and asylum seekers resettled in Western developed nations, for whom ongoing or daily stressors associated with the challenge of resettlement (e.g., isolation, unemployment, discrimination, and fear of deportation) have been found to predict levels of distress as strongly as (or more strongly than) prior exposure to war related violence (Ellis, MacDonald, Lincoln & Cabral, 2008; Gorst-Unsworth & Goldenberg, 1998; Miller et al., 2006; Steele, Silove, Bird, McGorry & Mohan, 1999). Taken together, these findings suggest that the simple or direct effects model in *Figure 1* requires some modification in order to reflect the salience of daily stressors and their relationship to mental health in conflict and post conflict settings. In the revised model depicted below in *Figure 2*, war exposure still has a direct influence on

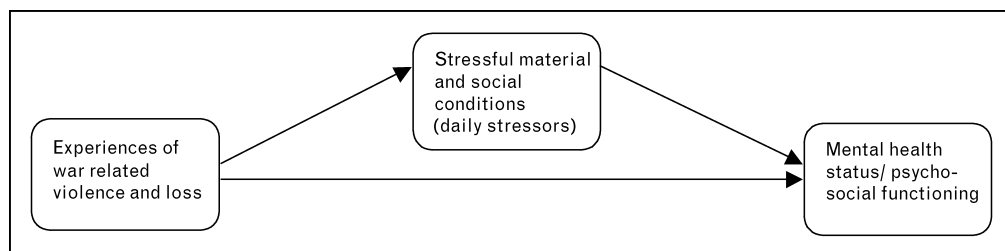


Figure 2: Daily stressors as partially mediating the relationship of war and disaster to mental health and psychosocial status.

mental health and psychosocial functioning; however, armed conflict also generates, or exacerbates, highly stressful social and material conditions, or daily stressors. In turn, these have a significant influence on mental health and psychosocial functioning. In this model, daily stressors function to partially mediate or explain the relationship of war and disaster exposure to mental health and psychosocial status. As discussed below, the inclusion of daily stressors in the model has significant implications for the design of mental health and psychosocial interventions and the allocation of scarce resources to fund such projects.

The present study

Consistent with the theme of this special issue of *Intervention*, the focus in this paper is on the use of a mixed methods approach to identify and develop a measure of daily stressors affecting youth in eastern Sri Lanka. The measure developed, the *Children's Daily Stressor Scale* (CDSS), was used in the previously mentioned assessment of factors affecting young people's mental health and psychosocial wellbeing in the eastern district of Ampara, a region of Sri Lanka badly affected both by civil war and the tsunami of 2004. In a separate paper (Fernando, Miller & Berger, in press), a detailed description of that larger study was provided by the authors and present findings showing the salience of daily stressors in predicting all mental health and psychosocial outcomes, and in partially mediating the relationship between war/disaster exposure on the one hand, and mental health and psychosocial status on the other.

A mixed methods approach to measure development in conflict and post conflict settings

There is a growing recognition of the value of integrating qualitative and quantitative

methods to develop contextually grounded assessment and evaluation tools in conflict and post conflict settings. As greater attention is paid to cultural variations in the understanding and expression of psychological wellbeing and distress, a growing number of researchers and program evaluators are looking for methods to assess mental health in ways that make sense within particular cultural contexts. Bolton has pioneered a particular approach that is both efficient and effective in the often difficult circumstances of conflict and post conflict settings. In that approach, *free-listing* (asking participants to generate items such as indicators of positive and negative mental health or psychosocial functioning) and key informant interviews are used to identify relevant items for questionnaire construction; questionnaires are then tested in community surveys, and their psychometric properties (reliability, validity, factor structure) are evaluated using conventional data analytic techniques. Bolton and Tang (2002) illustrated this approach in their development of measures of functioning in rural areas of Uganda and Rwanda. Items reflecting positive functioning among women and men were gathered through a freelist procedure; the most common items were then used to create functioning scales whose reliability and validity were established through their use in community surveys. A similar methodology was employed by Miller and his colleagues in Afghanistan (2006), who used a story telling task to elicit indicators of positive and negative mental health, in order to generate items for a culturally grounded brief assessment tool, the *Afghan Symptom Checklist* (ASCL). The internal consistency, convergent validity, and factor structure of the ASCL were subsequently established in a survey of mental health among adults

in Kabul. Variants on this methodology have been implemented effectively in a number of conflict and post conflict settings (Fernando, 2008; Hubbard & Pearson, 2004), and an informative discussion of it can be found in de Jong and van Ommeren (2002).

Rationale for developing the Children's Daily Stressor Scale

Our purpose in developing the CDSS was to be able to assess the relative contribution of daily stressors, on the one hand, and war and disaster exposure, on the other, to the mental health and psychosocial functioning of young people in eastern Sri Lanka. The north and east of Sri Lanka have been devastated by over two decades of civil war between the Liberation Tigers of Tamil Eelam (also known as the Tamil Tigers or LTTE), who have been fighting for an independent Tamil homeland in the north and east of the island, and the Sri Lankan military. Civilians have paid a particularly high price in the war, in which over 70 000 people are reported to have been killed and hundreds of thousands have been displaced from their homes and communities (BBC, 2009).

Until very recently, the district of Ampara, where this study was conducted, represented the easternmost front of the war. Layered onto this experience of prolonged armed conflict, the tsunami that hit Sri Lanka in December of 2004 killed at least 35 000 people and displaced over a million more (South Asia Free Media Association, 2008). In Ampara District, it has been estimated that roughly 10 000 people lost their lives in the tsunami (Department of Census & Statistics, Sri Lanka, 2005; Canadian International Development Agency [CIDA], 2008), with thousands of displaced families seeking shelter in make-

shift camps that are typically impoverished and overcrowded.

Previous reports have emphasised high levels of war or tsunami related trauma among both adult and child survivors of war and disaster in Sri Lanka (Hollifield, Hewage, Gunawardena, Kodituwakku, Bopagoda & Weerarathnege, 2008; Neuner, Schauer, Catani, Ruf, & Elbert, 2006). Given the growing evidence reviewed earlier regarding the salience of daily stressors in other conflict zones, the authors wondered whether the difficult social and material circumstances of everyday life, in the context of Sri Lanka's civil war and in the wake of the tsunami, might account for at least some of the high levels of reported distress. In our view, this was not merely an academic question. To the extent that ongoing daily stressors were having a significant influence on young people's mental health, intervention efforts might be considerably enhanced by expanding their focus to target those stressors, rather than focusing narrowly on ameliorating symptoms of post trauma reactions thought to stem from previous exposure to war related violence, or the frightening destruction of the tsunami.

In order to assess the relationship of daily stressors to young people's mental health in Ampara, however, it was first needed to develop a contextually appropriate measure of daily stressors. To accomplish this, the authors felt a mixed methods approach would be ideal. Qualitative methods would allow identifying a comprehensive list of contextually salient daily stressors, while quantitative methods would allow assessing of the psychometric properties of the new measure and to utilise it in a survey of factors influencing the mental health and psychosocial wellbeing of Sri Lankan youth.

Method

The setting

Ampara is a highly ethnically diverse district in Sri Lanka, with all three major ethnic groups represented: Sinhalese, who are primarily Buddhist and speak Sinhala as their mother tongue; Tamils, who are primarily Hindu and speak Tamil as their first language; and Muslims (also called Moors, Muslims are the only ethnic group in Sri Lanka generally referred to by their religion), who also speak Tamil as their native language. Many of the villages and towns along Ampara's coastline are comprised of either Tamil or Muslim families. Consequently, Tamils and Muslims have borne the brunt of the devastation from the tsunami. Conversely, many of the villages that lie along Ampara's northern border with the neighbouring state of Batticaloa are populated primarily by primarily Sinhalese residents; these so called 'border villages' have been particularly vulnerable to attack by the LTTE from across the border. In several border villages, attacks on civilians have led to a nightly migration out of the village, either to the homes of family or friends farther from the frontline, or in some cases, to clearings in the jungle, where families pass the night before returning to their homes again before sunrise. Tamil and Muslim communities have also suffered heavily as a result of the heavily militarised climate in the region and the violation of human rights by all sides in the armed conflict (Human Rights Watch, November 24, 2008).

Focus Groups

To develop the list of daily stressors that would be used to create the CDSS, a two step procedure was used. First, a series of six focus groups was conducted with youth from each of the three ethnic groups represented in

Ampara. Working in collaboration with a local NGO (nongovernmental organisation), whose staff reflects the ethnic diversity of Ampara and who have close relationships with communities throughout the district, the authors trained a group of counsellors in the basics of focus group facilitation. This was done using a combination of didactic and experiential training methods. Counsellors interested in co-facilitating focus groups were invited to practice their skills with mock focus groups comprised of other counsellors. This allowed us to select particularly effective facilitators, and to identify areas in need of additional training.

Six focus groups were subsequently conducted, two each with youth from each ethnic group. The groups were conducted in diverse settings and in the primary language of each group's participants: the Sinhalese groups were held on the school grounds of two schools in the district; the Tamil groups were held in village meeting places at the request of the Tamil community leaders; and the Muslim groups were held in the meeting halls of two camps for families displaced by the tsunami. Focus groups included an average of seven participants (range 5–8), who ranged in age from 13 to 19 years (mean age = 16 years, SD = 1.52), and were evenly split by gender. Recruitment for the focus groups was somewhat different by group, and reflected the recommendations of the NGO collaborator and local community leaders. For the Sinhalese groups, schoolteachers selected children who lived in nearby border villages; only one child's parents declined to have their child participate. For the Tamil groups, as there was concern that inviting some children and not others to participate might seem like favouritism and create a negative reaction, recruiting from the schools was discouraged; instead, community leaders

identified prospective participants whom they thought would contribute to and benefit from the focus group experience. Among Tamil parents, 75% gave consent for their children to participate in the groups. The process was similar with Muslim children, who were still living in camps for families displaced by the tsunami. Community leaders identified children for the focus groups, and all parents approached gave their consent for their children to participate in the study.

To identify salient daily stressors, participants in each group were asked to identify anything that made young people's lives difficult or stressful in the setting where they lived. Facilitators specifically asked about 'young people in the community,' not about the participants' own experience, in order to facilitate greater responsiveness. It was thought that group members would feel more at ease talking about other children and adolescents, particularly with regard to sensitive issues, than about themselves. It was interesting to observe, however, that several youth first identified stressors, and then stated that they had been talking about themselves and not about other youth in their community. A note-taker wrote down all of the stressors mentioned, and the facilitators asked for clarification or elaboration on any items whose meaning was not clear. Although there was some concern about whether girls would be forthcoming in mixed sex groups, participation by youth of both sexes was similar in all of the settings. A total of 20 stressors were identified in the focus groups.

In the second step, nine additional items were added to the CDSS based on Fernando's (2008) previous research in Sri Lanka, and on input from the counsellors at the NGO who were collaborating. The counsellors had extensive experience working with

families of each ethnic group in the diverse settings, in which this research was conducted, and were knowledgeable about the challenges facing young people on a daily basis. The 29 item CDSS can be seen in Table 1. The 20 items identified in the focus groups are the first 20 items on the scale. Respondents are asked to indicate whether they have experienced each item *never* (0), *once* (1), or *more than once* (2).

Translation of the CDSS and preparation for use in the survey

The CDSS was originally written in Sinhala. All items were then translated into Tamil and English by bilingual research assistants; the translations were then back-translated into Sinhala by other research assistants who were blind to the original items on the CDSS. Discrepancies were identified and resolved. To ensure equivalency and comprehensibility of items, all measures were then presented to six groups comprising approximately six school-aged youth from different grades (grades 7 to 9, and grades 10 to 13) from each ethnic group (Sinhalese, Tamil and Muslim); these youth were not the same as those who participated in the focus groups. These 'comprehensibility groups' were led by the focus group facilitators. Youth in these groups read each item and stated what they understood by it. Discrepancies in understanding were resolved by rewording items with ambiguous meaning and ensuring that wording was at no more than seventh-grade level.

The Survey

The CDSS was used along several other measures to assess factors related to the mental health and psychosocial wellbeing of 427 students, including 223 Sinhalese (girls = 108), 89 Tamil (girls = 53), and 115 Muslim (girls = 79) students from grades

Table 1. Means, standard deviations, and factor loadings for CDSS items

Item	Mean ¹	SD	Factor 1*	Factor 2**	Factor 3***
1. Lack of privacy	.58	.71	.46		
2. Going to jungle at night	.68	.77			
3. Lack of educational resources	.96	.72	.53		
4. Lack of educational opportunities.	.76	.72	.48		
5. Problems with teachers tutoring some children	.32	.64	.41		
6. Inadequate housing	.61	.76	.46		
7. Unwanted sexual advances	.09	.34			.47
8. Parental substance abuse	.36	.63		.43	
9. Sibling drug and alcohol abuse	.25	.57	.50		
10. Sibling smoking	.28	.61	.48		
11. Social rejection	.15	.40			
12. Risk of being sexually exploited	.10	.39			.48
13. Fear of being sexually abused	.28	.56			.42
14. Inadequate water	1.08	.81	.36		
15. Snakes in house or environment	1.02	.70	.39		
16. Parent abandonment	.08	.32			
17. Inadequate religious education	.38	.64	.54		
18. Media portrayals of sex	.31	.63			
19. Physical abuse by teachers	.21	.50			.48
20. Physical abuse by parents	.15	.45			.45
21. Seen your mother or father hitting your father or mother	.33	.62		.56	
22. Heard your mother or father hitting your father or mother	.33	.60		.57	
23. Heard your mother or father yelling at your father or mother	.54	.71		.67	
24. Hit so hard you had injuries	.46	.62			
25. Had a serious medical illness	.62	.68			
26. Yelled so hard it frightened you terribly	.84	.75			
27. Touched sexually without your permission	.13	.41			.46
28. Taken care of someone who was dying	.62	.69			
29. Leaving home in order stay safe	.68	.84			

Notes: ¹Possible range = 0-2; *Factor 1 = Deprivation; **Factor 2 = Inter-parental Conflict (IPC); ***Factor 3 = Abuse.

seven to 13. Approximately half the sample was female (56%; $N=240$). The mean age of the youth was 14.5 years ($SD=1.88$). Other measures in the survey assessed war

and disaster exposure (the 12 item *War and Tsunami Stressor Scale* or WTSS, a measure created for this study), depression (the *Birleson Depression Self-Rating Scale* or

DSRS; Birlleson, Hudson, Grey-Buchanan, & Wolff, 1987), anxiety (the *Multi-dimensional Anxiety Scale for Children* or MASC; March, Parker, Sullivan, Stallings, & Conners, 1997), PTSD (*Child PTSD Symptom Scale*; Foa, Johnson, Feeny, & Treadwell, 2001), and a culturally grounded measure of psychosocial wellbeing (the *Sri Lankan Index of Psychosocial Status-Child Version* or SLIPSS-C; Fernando et al., in press). The SLIPSS-C yields a total score as well as scores on its three subscales: *internalising*, *externalising*, and *social withdrawal*. A more detailed description of each of these measures and their psychometric properties in the present study can be found in Fernando et al. (in press).

Participants were recruited through the public school system. Despite the difficult conditions created by the years of civil war and the tsunami, Sri Lankan parents place a high priority on education and the great majority of children of both sexes attend school, even in rural areas. A detailed description of the recruitment process is provided elsewhere (Fernando et al., in press). The survey was conducted in four schools (two Sinhalese, one Tamil and one Muslim); these were selected for administration of the survey because of their location and/or the probability of including children in the school who were exposed to the war and/or the tsunami.

Results

Reliability of the CDSS

Cronbach's alpha is the conventional measure of a scale's internal consistency, or the extent to which the items on a scale intercorrelate and thus may be thought to measure an underlying or latent construct. There is a growing debate, however, regarding the appropriateness of Cronbach's alpha for scales that measure exposure to stressful

events, because the items on such scales do not assess latent constructs; consequently, their items should not be expected to correlate highly with one another (Netland, 2005). The authors partially agree with this critique of assessing internal consistency for a measure such as the CDSS; however, we also recognize that under conditions of armed conflict or disaster, it seems likely that young people will be faced with a common, and at least moderately, inter-correlated constellation of stressors. Our finding of a Cronbach's alpha of .75 for the CDSS is consistent with this expectation of a moderate inter-correlation among stressors assessed by the measure. We do, however, agree with Netland's view that items from stressful events checklists should not be dropped simply because they fail to contribute to the internal consistency of the scale (an appropriate procedure to follow when developing measures of latent constructs such as depression or anxiety). When assessing stressful events, whether war and disaster exposure or daily stressors, it is essential to develop a comprehensive list of salient items, bearing in mind that some stressors may have quite an impact, even though unrelated to other stressors on the checklist.

Factor Structure of the CDSS

We conducted an exploratory factor analysis of the CDSS in order to identify meaningful subsets of daily stressors. Principal axis extraction and direct oblimin (oblique) rotation revealed three factors, or subscales, which together explained roughly 31% of the variance of the 29 items. To minimise the number of items loading on multiple factors while still retaining conceptually meaningful factors, we set a cut off of .35; moreover, following Fiola, Bjorck, and Gorsuch (2002), an item was considered to load uniquely on a particular factor only

when its loading on that actor was greater than its loading on any other factor by at least .15. The first subscale was labelled *deprivation*, measured by 10 items primarily reflecting aspects of physical deprivation (e.g., 'lack of clean drinking water'; 'snakes in the home or in places around you', alpha = .71). The second subscale was labelled *inter-parental conflict* (IPC), measured by four items, three of which are about actual conflict (e.g., 'seen your mother or father hitting your father or mother') and one about parental substance use (alpha = .66). The third subscale was labelled *abuse*, measured by six items (e.g., 'being physically hurt by parents'; 'being physically hurt by teachers'; 'being sexually touched without your permission', alpha = .62). Nine items did not load uniquely on any of the three factors.¹ The three subscales and their respective items can be seen in Table 1.

Validity of the CDSS

The CDSS has good face validity because the items in it were drawn directly from the experiences of youth living in the settings where the research was conducted, with additional items added by counsellors who themselves lived and/or worked in the same communities as many of the young people who participated. Convergent validity was assessed by examining the extent to which the CDSS behaved as expected in relation

to several indices of mental health. Given the positive association found in previous studies between stressful events, including daily stressors, and mental health, we expected to find a similarly positive relationship between the CDSS and our measures of psychiatric symptomatology and psychosocial functioning. As can be seen in the correlation matrix in Table 2, the CDSS performed as expected, with correlations of medium strength as defined by Cohen (1988) between the CDSS total score as well as the *abuse* and *deprivation* subscales, and all mental health outcome variables. The correlation between the *interparental conflict* (IPC) subscale of the CDSS and the mental health variables was also highly significant, though small in strength ($r = .15-.20$), $p < .001$). Taken together, these findings are consistent with an interpretation of the CDSS as having good convergent validity.

Results of the survey: war/tsunami exposure, daily stressors, and mental health

As noted earlier, a detailed description of the methodology employed in the survey, and a thorough presentation and discussion of our findings regarding the role of daily stressors in mediating the relationship of war/disaster exposure to young people's mental health, can be found in Fernando et al. (in press). Our aim here is simply to

Table 2 Correlation matrix for Children's Daily Stressor Scale (CDSS full scale and subscales) and mental health outcomes

	CDSS	Deprivation	IPC	Abuse	SLIPSS-C ¹	PTSD ²	Depression ³	Anxiety ⁴
CDSS		.80*	.53*	.53*	.35*	.42*	.37*	.38*
Deprivation	.80*		.19*	.25*	.22*	.33*	.27*	.25*
IPC	.53*	.19*		.14*	.19*	.18*	.15*	.15*
Abuse	.53*	.25*	.14*		.37*	.30*	.30*	.30*

Notes: ¹Sri Lankan Index of Psychosocial Status-Child Version; ²Child Post-traumatic Stress Scale 3; ³The Birleson Depression Self-Rating Scale; ⁴The Multi-dimensional Anxiety Scale for Children.

* $p < .001$ (two-tailed).

illustrate the utility of the CDSS in helping us to better understand factors influencing young people's mental health and psychosocial wellbeing in a setting of war and natural disaster.

To assess the relative contribution of war/disaster exposure and daily stressors to mental health, we conducted a series of multiple regressions with age and gender entered first, war and disaster exposure (the WTSS) entered in the next step, and daily stressors (CDSS) entered last. We then repeated this set of analyses using the CDSS subscales in place of the total scale score. Key findings include the following:

- The addition of daily stressors to the model markedly lowered the strength of the relationship between war/disaster exposure and all mental health variables, although it remained statistically significant.
- Using the CDSS total score, daily stressors predicted levels of PTSD, depression, and anxiety more strongly than war/tsunami exposure.
- Prediction of SLIPSS-C scores (total score and the *externalising*, *internalising*, and *social withdrawal* subscales) was similar for daily stressors and war/tsunami exposure.
- Similar results were found when we used the CDSS subscales in place of the CDSS total score. *Abuse* was strongly related to all mental health variables at a level comparable to, or greater than, war/tsunami exposure. Similarly, *deprivation* was significantly related to PTSD, internalising behaviour, and anxiety at levels equal to, or greater than, war/tsunami exposure.
- A mediational analysis further revealed that daily stressors partially mediated the relationship between war/disaster exposure and mental health. This partial mediation effect is illustrated using anxiety as an outcome variable in *Figure 3*. In the model, $c = .33$ represents the beta weight of war/disaster exposure (WTSS) as a predictor of anxiety without

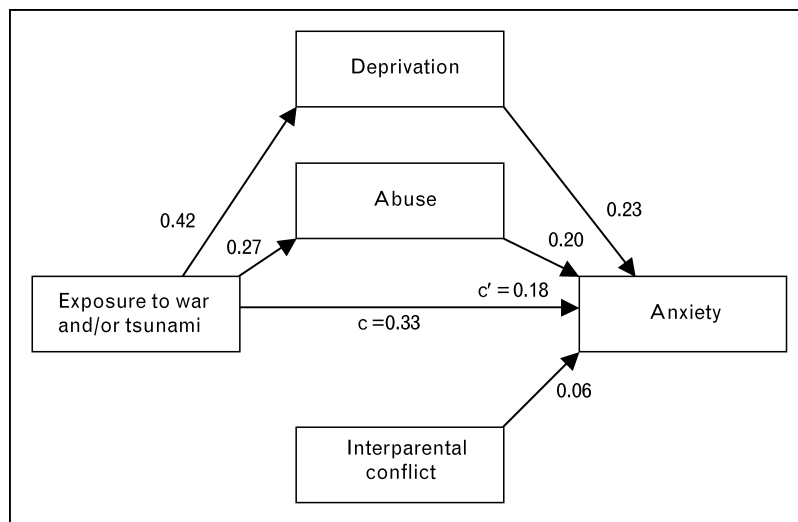


Figure 3: Partial Mediation by CDSS Deprivation Abuse Subscales on Relationship of War/Tsunami Exposure to Anxiety. Notes: c = Beta weight of WATS when entered as sole predictor of Anxiety; c' = Beta weight of WATS when CDSS subscales are included in the model as predictors of Anxiety. All numbers represent beta weights.

daily stressors in the model; $c' = 18$ is the altered beta weight once daily stressors (CDSS) have been entered into the model. As can be seen in *Figure 3*, IPC was not a significant predictor of anxiety in the model, nor did it mediate the relationship of WTSS scores to any other mental health outcome. However, IPC scores *were* related to other mental health outcomes, including PTSD, SLIPSS-C total score, and the SLIPSS-C Internalizing subscale. Because IPC scores were not related significantly to war/disaster exposure, witnessing inter-parental violence is best conceptualised in this study as an ongoing source of stress in young people's lives that was statistically unrelated to political violence and natural disaster.

Discussion

The use of a mixed methods approach in this study allowed identification of contextually salient stressors affecting the mental health and psychosocial wellbeing of young people in a heavily war affected and disaster impacted region of Sri Lanka. The items gathered through the qualitative phase of our research design allowed us to construct a useful and contextually appropriate measure of daily stressors, which in turn allowed us to examine systematically the relations among war and disaster exposure, daily stressors, and mental health and psychosocial functioning among youth in eastern Sri Lanka.

Netland (2005) has argued that a critical feature of any war events checklist is its inclusion of the full range of salient events in the particular setting where the research is being conducted. The authors agree, and would extend Netland's argument to the study of daily stressors, the stressful social and material conditions that form the con-

text of everyday life in conflict and post conflict settings. Participants in this study lived in very diverse settings: rural villages surrounded by jungle and rice paddies, and impoverished, overcrowded camps for families displaced by the tsunami. Although several stressors were common across contexts (e.g., poisonous snakes in and around people's homes, physical and sexual abuse) other items were especially salient in particular settings (e.g., the nightly displacement of families in the border villages, lack of privacy and inadequate housing in the camps for displaced families). The focus groups with young people in each setting were essential in enabling us to create a comprehensive measure of daily stressors for use in the survey, a measure with strong face validity because it was developed using items generated by participants in each of the diverse setting. It seems highly unlikely that any measure created *a priori* could have included the full range of items identified by the focus group participants. Herein lies the value of the qualitative phase of mixed methods designs in the development of contextually grounded assessment and evaluation tools: qualitative methods such as focus groups, freelist, and key informant interviews allow community members to identify locally salient variables whose importance might otherwise be overlooked by researchers and NGO staff. Such methods are efficient and effective; they are easily learned by staff without university education or any advanced training in mental health, and they go a long way towards ensuring that instruments will include contextually relevant items.

Our survey using the CDSS yielded important findings regarding the relationship of daily stressors to young people's mental health. Among youth in eastern Sri Lanka, direct exposure to the civil war and the

tsunami does have a clear and direct relationship to their mental health. However, it is equally clear that such exposure is far from the only factor influencing young people's psychological wellbeing. In fact, our findings suggest that direct exposure may not be the most critical determinant of mental health and psychosocial functioning among young people in the region where our research was conducted. With regard to the salience of daily stressors, our data suggest that:

- (1) the effects of catastrophic events such as war and natural disaster are exerted to a significant extent *indirectly*, by causing or exacerbating stressful social and material conditions that affect young people on a daily basis; and
- (2) even in conditions of armed conflict and disaster, conflict and disaster are not the only sources of traumatic stress facing children and adolescents, experiences of child abuse and deprivation, for example, were significantly related to levels of PTSD and anxiety, more strongly in fact than direct exposure to the war or tsunami.

In a related vein, the focus groups led to the inclusion on the CDSS of several items were that significantly related to children's mental health, but were neither caused nor exacerbated by armed conflict or the tsunami (e.g., witnessing inter-parental violence). This finding underscores the importance of ecological assessments that consider the full range of factors that may threaten children's wellbeing, and cautions against focusing only on stressors directly or indirectly related to armed conflict or disaster. As we have noted elsewhere (Fernando et al., in press), daily stressors represent *ongoing* sources of stress in young people's lives; con-

sequently, they represent important targets for preventive interventions. Although clinical interventions may help to ameliorate the adverse impact of previously experienced violence and loss, such experiences cannot be undone. Daily stressors, in contrast, *can* be altered. For example, more secure homes and toilets with greater privacy can be built in camps for displaced families, child physical and sexual abuse can be targeted through a variety of community based and family focused interventions. Also, better protection can be provided to villages in close proximity to the frontline so that villagers no longer feel the need to leave for safer shelter every night. This is by no means an argument *against* the provision of trauma focused interventions for war and disaster exposed youth, whether in Sri Lanka, or elsewhere. Man-made and natural disasters can be devastating, and experiences such as the disappearance or death of loved ones can have enduring effects on children's mental health and psychosocial development. Although the availability of social support, the re-establishment of safe and predictable environments, and the passing of time will foster resilience and recovery among many young people exposed to such events, we recognise that some individuals may experience persistent distress that requires specialised assistance. However, in situations where daily stressors such as those identified in this study are exerting a significant effect on young people's mental health, the authors believe it is prudent to allocate scarce resources to reducing or eliminating such stressors before providing specialised clinical services to large numbers of children and adolescents. In sequential terms, it may be useful to think of programmes that target daily stressors as the first phase in the intervention process; the second phase would entail specialised

clinical services aimed at fostering recovery among traumatised and bereaved youth who do not respond to improved social and material conditions in their daily lives. The usefulness of such a sequential approach to addressing the mental health and psychosocial needs of young people living in situations of armed conflict and natural disaster remains an empirical question, and one that we believe represents an important focus for future research.

Limitations

The present study was limited by several factors. First, although multiple methods were used, data were only gathered from children. Due to limited resources (time, funding, and staff), we were unable to assess the perspectives of parents, teachers, or other adults who might have enriched our understanding of young people's mental health and the factors influencing it. We did incorporate the feedback of the staff of the local NGO with whom we collaborated, which led to the addition of several items to the CDSS. Clearly, however, additional stakeholder input into both the qualitative and quantitative phases of the project would have been desirable.

A second limitation concerns a major stressor that was identified outside of the focus groups, and which could not be asked about without potential risk to study participants and their families. It is widely believed that a former Tamil Tiger commander, who goes by the *nom de guerre* Coronel Karuna, was at the time of this study the head of a powerful organised crime and paramilitary organisation whose violent reach extended throughout Ampara. The so called *Karuna Faction* has been cited repeatedly by human rights organisations for abducting children and other human rights abuses, including the massacre of 54 villagers in 1999 (Human

Rights Watch, 2006). During informal conversations we had with NGO staff, religious leaders, and other researchers working in Ampara, it became clear that the Karuna Faction represents a source of significant stress for many families in the district; however, this was not mentioned in any of the focus groups we held to identify daily stressors. It was not known whether this was because participants did not perceive Karuna's organisation as a distinct stressor, or because they were uncomfortable discussing his organisation in a public setting. In any case, it was recognised that stress related to the activities and omnipresent threat of the Karuna Faction may have accounted for some of the unexplained variance in our mental health outcomes.

Finally, it was recognised that a major strength of contextually grounded instruments such as the CDSS, namely, their inclusion of locally salient and meaningful items, also represents a limitation to their usefulness of other contexts where different items (e.g., different daily stressors or indicators of distress) may be more salient. In a similar vein, the extent to which results from assessments using contextually grounded instruments can be generalised may also be limited by the context specific nature of the measures. We note, however, that the ability to generalise results is not necessarily a priority in the development and use of context specific instruments. Rather, the primary aim is to develop tools that have local relevance and that can inform the development and evaluation of locally meaningful interventions. Moreover, although instrument items are likely to vary by context, the underlying relationships among key variables may be fairly constant across settings. For example, there is growing evidence that the relationship of daily stressors to mental health is quite consistent

across settings, although there is considerable variation in the nature and intensity of the specific daily stressors that confront people in different contexts (Miller & Rasmussen, in press).

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¹ In the Fernando et al. (in press) paper in which we examine the relationships among daily stressors, war experiences, and mental health among Sri Lankan youth (the larger study on which this paper is based), a 20 item version of the CDSS was used in which only those items loading uniquely on one of the three factors were retained.

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