

# Effects of War Trauma on Cambodian Refugee Adolescents' Functional Health and Mental Health Status

RICHARD F. MOLLICA, M.D., M.A.R., CHARLES POOLE, M.P.H., Sc.D., LINDA SON, Sc.D.,  
CAROLINE C. MURRAY, Ed.D., AND SVANG TOR

## ABSTRACT

**Objective:** To measure the effect of war trauma on the functional health and mental health status of Cambodian adolescents living in a refugee camp on the Thai-Cambodian border. **Method:** A multistage probability sample identified 1,000 households in the camp known as Site Two. Interviews were conducted in each household with randomly selected adults 18 years of age and older. All adolescents aged 12 and 13 years old, along with one parent, were interviewed. One hundred eighty-two adolescents (94 girls, 88 boys) and their parents participated. Culturally sensitive instruments were used, including Cambodian versions of the Child Behavior Checklist (CBCL) and the Youth Self-Report (YSR). **Results:** Parents and adolescents reported the latter having experienced high levels of cumulative trauma, especially lack of food, water, and shelter. Mean Total Problem scores were in ranges similar to those of adolescents receiving clinical care in the United States, Netherlands, and Israel. Nearly 54% (53.8%) had Total Problem scores in the clinical range by parent report on the CBCL and 26.4% by adolescent report on the YSR. The most commonly reported symptoms were somatic complaints, social withdrawal, attention problems, anxiety, and depression. The dose-effect relationship between cumulative trauma and symptoms was strong for parent reporting on the CBCL; the subscales on both the YSR and CBCL for Anxious/Depressed and Attention Problems revealed dose-effect associations. Dose-effect relationships between cumulative trauma and social functioning or health status were lacking. **Conclusion:** The high levels of emotional distress in this population of Cambodian adolescents and corresponding dose-effect relationships reveal the important negative psychosocial impact of violence on Cambodian adolescents. Lack of findings related to physical health status and the presence of positive social functioning of many youths should not deter health care providers and public health officials from diagnosing and treating underlying high levels of psychological distress. *J. Am. Acad. Child Adolesc. Psychiatry*, 1997, 36(8):1098-1106. **Key Words:** trauma, adolescents, children, Cambodian refugees, posttraumatic stress disorder.

Over the past decade the United Nations International Children's Emergency Fund (UNICEF) and Amnesty International have drawn worldwide attention to the impact of war trauma, political oppression, and civil conflict on children and adolescents (Amnesty Inter-

national, 1989a,b; Macksoud, 1993; Ressler et al., 1993; UNICEF, 1990). Considerable information exists about the medical impact of war trauma on the health status of children (Macksoud, 1993; Ressler et al., 1993). Psychosocial symptoms of children who have experienced torture (Aalund et al., 1988; Allodi, 1980), political oppression (Punamaki, 1989; Silove, 1988), Nazi concentration camps (Kestenberg, 1985; Moskovitz, 1982), civil war (Boothby, 1986), and refugee camp confinement (Dadfar, 1988; McCallin, 1993; McCallin and Fozzard, 1993; Thein and Malapert, 1988) have been clinically described. Epidemiological descriptions of the psychosocial impact of war trauma on refugee children are now emerging. For example, Sack and his colleagues (1993,1994) have recently determined the prevalence of trauma-related psychiatric disorders and

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*All authors are with the Harvard Program in Refugee Trauma, Harvard School of Public Health, Cambridge, MA. Dr. Poole is also with the Department of Epidemiology and Biostatistics, Boston University School of Public Health, Boston.*

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*Reprint requests to Dr. Mollica, Harvard Program in Refugee Trauma, 8 Story Street, Third Floor, Cambridge, MA 02138.*

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social functioning in Cambodian refugee adolescents resettled in the United States.

The present study is a population survey designed to measure the impact of war trauma on the functional health and mental health status of Cambodian youths living as refugees along the Thai border. Studies of this type have not been numerous because of the logistical difficulties of conducting research in war zones, the direction of resources toward the immediate physical and protection needs of children, and the generic problems inherent in assessing psychiatric status without the benefit of experienced psychiatric professionals. The present study overcomes some of these difficulties by focusing on a wide range of behavior problems and by using instruments reliable in cross-cultural applications adapted specifically for use with this target population. The goals of this study are to ascertain, among Cambodian adolescents living in a refugee camp, the extent of their emotional and behavioral problems, their self-perceptions of social functioning and health status, and the degree of association between these conditions and their traumatic life experiences.

## METHOD

In 1990, the United Nations Border Relief Organization (UNBRO), which provided humanitarian assistance to nearly 370,000 Cambodian displaced persons living on the Cambodia-Thailand border, requested of the authors a community study of the mental health impact of violence on the Cambodian residents of the refugee camp known as Site Two (Mollica and Jalbert, 1989). Site Two, the largest of UNBRO's camps, contained almost 160,000 residents; nearly half were under 17 years of age. Numerous anecdotal reports at the time of the survey suggest that these Cambodian adults and youths were at risk for developing serious psychosocial problems (Crossette, 1988) due to camp conditions (Committee for the Coordination of Services to Displaced Persons in Thailand, 1988; Reynell, 1989) and prior exposure to the violence of the Pol Pot regime (1975 to 1979) (Hannum, 1989).

The data reported here come from a household survey conducted in the Site Two camp between May 7 and June 3, 1990. Detailed descriptions of the general survey methodology are reported elsewhere (Mollica et al., 1993). A procedure of multistage area probability sampling was employed, using a grid map of the camp, in conjunction with information on the number of households within each of the five regions into which the camp had been administratively divided. One hundred primary sampling units were distributed among the five regions in proportion to the numbers of households within them. Trained Cambodian interviewers proceeded according to a specified route from randomly assigned starting points to 10 households within each primary sampling unit. An interview was conducted with one randomly selected adult (aged 18 years and older) in each household; interviews were also conducted with all children aged 12 and 13 in that household and with one randomly selected parent. Cambodian children within this narrow age

range were selected for validity reasons to lessen the potential impact of age-related confounding factors as well as to describe the mental health characteristics of the youngest group of camp residents to have been born under the Khmer Rouge (Szymusiak, 1986). There was a 100% completion rate; 92% of the adolescents were living with at least one biological parent. Reported results of the survey of adult residents reveal a highly traumatized population with more than 80% stating that they felt depressed and were in a state of poor health. It also indicated high levels of symptoms consistent with posttraumatic stress disorder (PTSD) and major depression (Mollica et al., 1993, in press).

## Survey Instruments

A separate instrument was constructed for the 12- and 13-year-old adolescents and their parents. All instruments were translated prior to use according to the methods of cultural research in non-English-speaking settings (Westermeyer, 1985). The instruments contained self-reported and parent-reported measures of traumatic life experiences and educational, social, and cultural activities in the camp, based on the authors' previous field work in Site Two (Mollica and Jalbert, 1989; Mollica et al., 1993). Assessment of physical health status was based on the parents' perception of the adolescents' physical health status using the short form of the Medical Outcomes Study (Stewart et al., 1989).

The principal instruments used to assess mental health status were the Child Behavior Checklist (CBCL) (Achenbach, 1991a), administered to the parents, and the Youth Self-Report (YSR) (Achenbach, 1991b), administered directly to the adolescents. The CBCL consists of 118 behavioral and emotional problem items; for each item the parent or other adult respondent indicates it is either not true of the child (score 0), somewhat or sometimes true (score 1), or very true or often true (score 2). The YSR is similar in design, but worded in the first person, with a somewhat altered list of questions. In standardizing the CBCL, Achenbach (1991a) established age- and gender-specific ranges to distinguish between clinic-referred and non-clinic-referred youths in the United States by grouping the Total Behavior Problem scores into clinical (percentiles 91 to 100), borderline clinical (percentiles 82 to 90), and nonclinical (lower percentile than 82) ranges. These ranges were selected to minimize the number of false positives (nonreferred youths who scored above the cutoff point) and false negatives (referred youths who scored below the cutoff point) and to indicate whether a child was suffering from serious emotional and cognitive problems. The measures used by Achenbach have had considerable cross-national application in non-English-speaking populations (Achenbach et al., 1987, 1990a; Weisz et al., 1987a). The ranges established by Achenbach, although they use Western norms, have served as the basis for making comparisons between non-Western and Western children and for identifying non-Western children who resemble Western children in need of clinical treatment.

## RESULTS

The trauma experiences of the adolescent boys and girls, as reported by themselves and their parents, are shown in Table 1. Pronounced disagreement existed between the children and their parents on most of the trauma events. Most of the values of the  $\kappa$  statistic were below .5, indicating poor agreement. The closest agree-

**TABLE 1**  
Self-Reported and Parent-Reported Trauma Events Experienced by 182 Khmer Adolescents  
Aged 12 and 13 Years, by Gender, Site Two, Thailand, 1990

Trauma Event	Boys ( <i>n</i> = 89)			Girls ( <i>n</i> = 93)		
	Child Reports (%)	Parent Reports (%)	$\kappa$	Child Reports (%)	Parent Reports (%)	$\kappa$
Shelling or bombings	52.8	13.5	.2	50.5	16.1	.3
Not enough food, water, or shelter	43.8	52.8	.6	52.7	58.1	.3
Separation from family	27.0	15.7	.3	25.8	8.6	.2
Close to death due to illness or injury	16.8	16.8	.3	17.2	12.9	.4
Severe beating or other serious injury	15.7	19.1	.5	11.8	3.2	.1
Not enough medical care	11.2	20.2	.2	16.1	17.2	.4
Saw family member or friend killed or seriously injured	10.1	6.7	.1	9.7	11.8	.4
Locked up or in prison	3.4	1.1	.5	4.3	1.1	.4

ment was between the boys and their parents on whether the boys had experienced insufficient food, water, or shelter. The children of both genders reported experiencing shelling or bombings, separation from family, and being locked up or imprisoned much more frequently than did their parents. The boys and girls reported approximately equal frequencies of most trauma events.

Table 2 provides details on the Total Problem scores in the parent and child reports. Based on the parent reports, more than half the boys and girls fell into the clinical range for the Total Problem score. According to the children's reports, the prevalence rates in the clinical range were much lower, approximately one fourth of the boys and girls. When the borderline range is taken

into account, only one fourth of the adolescents were in the nonclinical range based on the parent reports (CBCL). Based on the child reports (YSR), three fifths of the adolescents were in the nonclinical range. The prevalence of symptom scores in the clinical ranges on the CBCL (parent reports) and on the YSR (child reports) on the Achenbach subscales for the boys and girls are shown in Table 3. Among the boys, the subscale

**TABLE 2**

Total Problem Scores From the Child Behavior Checklist and Youth Self-Report, by Gender, 182 Khmer Adolescents Aged 12 and 13 Years, Site Two, Thailand, 1990

Measure	Gender		
	Boys ( <i>n</i> = 89)	Girls ( <i>n</i> = 93)	Both ( <i>n</i> = 182)
<b>Child Behavior Checklist</b>			
Mean Total Problem score	61.3	56.2	58.7
Proportion (%) in			
Clinical range	53.9	53.8	53.8
Borderline range	22.5	17.2	19.8
Nonclinical range	23.6	29.0	26.4
<b>Youth Self-Report</b>			
Mean Total Problem score	57.0	51.0	54.0
Proportion (%) in			
Clinical range	29.2	23.7	26.4
Borderline range	12.4	15.0	13.7
Nonclinical range	58.4	61.3	59.9

**TABLE 3**

Prevalence (%) of Scores in the Clinical Range on the Child Behavior Checklist and Youth Self-Report Scales, by Gender, 182 Khmer Adolescents Aged 12 and 13 Years, Site Two, Thailand, 1990

Measure	Gender		
	Boys ( <i>n</i> = 89)	Girls ( <i>n</i> = 93)	Both ( <i>n</i> = 182)
<b>Child Behavior Checklist</b>			
Total Problem score	53.9	53.8	53.8
Somatic Complaints	28.1	10.8	19.2
Withdrawn	20.2	9.7	14.8
Social Problems	13.5	16.1	14.8
Attention Problems	18.0	9.7	13.7
Aggressive Behavior	13.5	9.7	11.5
Anxious/Depressed	15.7	4.3	9.9
Thought Problems	13.5	2.2	7.7
Delinquent Behavior	0.0	10.8	5.5
<b>Youth Self-Report</b>			
Total Problem score	29.2	23.7	26.4
Somatic Complaints	24.7	11.8	18.1
Withdrawn	10.1	1.1	5.5
Social Problems	18.0	17.2	17.6
Attention Problems	13.5	6.5	9.9
Aggressive Behavior	12.4	6.5	9.3
Anxious/Depressed	16.9	5.4	11.0
Thought Problems	11.2	1.3	7.7
Delinquent Behavior	0.0	8.6	4.4

**TABLE 4**  
Prevalence of Total Problem Scores in the Clinical Range on the YSR and CBCL in Relation to Self-Reported and Parent-Reported Trauma Events Experienced by 182 Khmer Adolescents Aged 12 and 13 Years, Site Two, Thailand, 1990

No. of Child-Reported Trauma Events	No. of Children	Prevalence of Child-Reported Symptom Scores (YSR) in Clinical Range (%)	Prevalence Odds Ratio (95% Confidence Interval)
0	23	26.1	1.0
1	57	24.6	1.0 (0.3-3.4)
2	54	27.8	1.2 (0.4-3.8)
3	31	25.8	1.0 (0.3-3.5)
4-6	17	29.4	1.0 (0.2-4.3)

  

No. of Parent-Reported Trauma Events Experienced by Child	No. of Children	Prevalence of Parent-Reported Symptom Scores (CBCL) in Clinical Range (%)	Prevalence Odds Ratio (95% Confidence Interval)
0	47	46.8	1.0
1	61	45.9	0.9 (0.4-2.1)
2	49	53.1	1.3 (0.6-2.9)
3	12	83.3	5.9 (1.2-41.1)
4-5	13	92.3	17.7 (2.4-394.4)

Note: YSR = Youth Self-Report; CBCL = Child Behavior Checklist.

with the highest clinical range prevalence was the Somatic Complaints scale, whether based on the parent or child reports. Among the girls, the Social Problems scale had the highest prevalence of scores in the clinical range, again whether based on the child or parent reports. The only subscale on which the girls had an appreciably greater prevalence than the boys was Delinquent Behavior. Differences in gender on the Delinquent Behavior subscale included items such as "prefers older people," "lacks guilt," "bad companions," "truancy," "steals outside home," and "thinks about sex too much."

Dose-response relationships between Total Problem scores and cumulative trauma, measured as the number of different trauma events, reported by the children and their parents are shown in Table 4. In these analyses, gender is controlled and the Total Problem scores are expressed as prevalence in the clinical ranges. There is a complete absence of association between trauma and symptoms based on the child reports but a very strong association based on the parent reports. The same results are apparent in analyses in which the Total Problem scores are treated as continuous variables, again with gender controlled.

Dose-response relationships between cumulative trauma and all the symptom subscales are shown in Table 5. In these analyses, gender is controlled and the symptom scales are treated as continuous variables. The

only scales that showed appreciable associations with cumulative trauma on the child-reported data were the Anxious/Depressed and Attention Problems scales. Dose-response relationships were evident for all the symptom scales in the parent-reported data. The strongest associations (i.e., those with the greatest estimated slopes) were for the Anxious/Depressed and the Aggressive Behavior scales.

Table 6 reveals the prevalence among the boys and girls of functional impairments due to health problems, as reported by the children and their parents. In general, agreement between the children and their parents was extremely poor on these items. However, fewer than 10% of the adolescents were rated as disabled. The results on school attendance not shown in Table 6 are consistent with these findings. Nearly all the children and their parents said the children were attending school at the time of the survey; for 174 (93.5%) of the children, the parents and their children agreed that the child was attending school in Site Two. Only the parents were asked a question about the general health status of their children. The modal response was "fair," with 52% of the parents choosing this word to describe their children's health; 7% described their children's health as "poor." Twenty-eight percent said it was "good," and only 12% said it was "excellent." The proportions of responses varied very little between the parents of boys and girls.

Dose-response relationships between cumulative trauma and functional health status, as reported by the children and their parents, are shown in Table 7. For health-related functional impairments, the dependent variable is the proportion of children with at least one of the impairments listed in Table 6. These analyses are conducted separately for child and parent reports. As can be seen in Table 7, no consistently positive associations were found between cumulative trauma and health-related functional impairment, using either the reports by the children or those by their parents. Similarly, dose-effect relationships were not found for cumulative trauma and the parents' report of their children's general health status.

## DISCUSSION

The adolescents in Site Two were reported by both their parents and themselves to have experienced high levels of trauma. While there were significant differences in the reporting of individual types of trauma experiences, both parents and children agreed that the youths had had insufficient food, water, and shelter. The additional emphasis of the adolescents on shelling or bombings show these findings to be consistent with the reality of camp life in Site Two (Mollica and Jalbert, 1989; Reynell, 1989; WHO, 1986). This survey also revealed high levels of emotional distress consistent with the clinical literature on the health and psychosocial impact of manmade violence on children and adoles-

**TABLE 5**  
Symptom Scales in Relation to Number of Trauma Events

Measure	No. of Trauma Events					Slope (95% Confidence Limits)
	0	1	2	3	≥4	
No. of children						
Child reports	23	57	54	31	17	
Parent reports	47	61	49	12	13	
Total Problem scale						
Child reports	(46.1)	7.2	12.2	5.2	12.5	1.4 (-2.3, 5.2)
Parent reports	(49.8)	2.4	12.0	39.7	31.2	8.7 (4.4, 12.9)
Withdrawn scale						
Child reports	(3.7)	-0.1	0.5	0.4	0.2	0.1 (-0.2, 0.4)
Parent reports	(4.3)	0.7	1.9	3.7	2.5	0.8 (0.3, 1.3)
Somatic Complaints scale						
Child reports	(4.5)	1.4	1.8	0.3	0.4	-0.1 (-0.5, 0.4)
Parent reports	(5.6)	-0.1	0.8	2.5	1.8	0.5 (0.0, 1.0)
Anxious/Depressed scale						
Child reports	(7.0)	1.4	3.0	1.6	4.8	0.7 (0.0, 1.5)
Parent reports	(6.2)	1.9	2.9	6.9	6.0	1.6 (0.8, 2.3)
Social Problems scale						
Child reports	(5.1)	0.0	0.4	0.6	0.7	0.2 (-0.2, 0.5)
Parent reports	(4.8)	0.3	0.3	2.7	2.5	0.6 (0.2, 1.0)
Thought Problems scale						
Child reports	(2.7)	1.0	1.4	-0.2	1.1	0.0 (-0.3, 0.4)
Parent reports	(2.8)	-0.2	0.2	1.5	2.9	0.6 (0.2, 0.9)
Attention Problems scale						
Child reports	(4.4)	1.3	1.6	1.6	3.5	0.6 (0.1, 1.1)
Parent reports	(5.5)	0.4	1.3	4.7	3.3	0.9 (0.4, 1.5)
Delinquent Behavior scale						
Child reports	(4.1)	0.3	0.6	0.1	0.3	0.0 (-0.4, 0.4)
Parent reports	(4.1)	-0.6	0.8	4.1	3.0	0.9 (0.3, 1.4)
Aggressive Behavior scale						
Child reports	(8.3)	0.8	2.6	1.9	1.3	0.2 (-0.6, 1.0)
Parent reports	(9.4)	0.5	2.4	9.1	6.1	1.8 (1.0, 2.7)

*Note:* Child-reported trauma is analyzed with child-reported symptoms (Youth Self-Report). Parent-reported trauma is analyzed with parent-reported symptoms (Child Behavior Checklist). The mean symptom scores are given in parentheses for the reference category of zero trauma events; mean differences are shown for the higher trauma categories. Means and mean differences are adjusted for gender.

**TABLE 6**  
Prevalence (%) of Self-Reported and Parent-Reported Functional Impairments Due to Health Problems Among 182 Khmer Adolescents Aged 12 and 13 Years, by Gender, Site Two, Thailand, 1990

Impairment	Boys (n = 89)			Girls (n = 93)		
	Child Reports (%)	Parent Reports (%)	κ	Child Reports (%)	Parent Reports (%)	κ
Unable to walk without assistance	6.7	9.0	.2	1.1	3.2	.0
Must stay indoors most of time because of sickness	6.7	5.6	.1	2.2	3.2	.0
Cannot go to school most of time because of sickness	3.4	2.2	.4	1.1	3.2	.0
Cannot play most of time because of sickness	3.4	2.2	.4	2.2	3.2	.0

cents (Macksoud et al., 1993). The Site Two youths had higher Total Problem scores on the CBCL (two to three times higher) than any other group of non-clinically referred children assessed using the same measures in the Netherlands (Achenbach et al., 1987; Verhulst et al., 1989), Australia (Achenbach et al., 1990b), Puerto Rico (Achenbach et al., 1990a), Thailand (Weisz et al., 1987a), Israel (Apter et al., 1988), and the United States (Achenbach et al., 1990a). In fact, this population looked similar to clinically referred children in the Netherlands, United States, and Israel. Similarly, Total Problem scores for the YSR revealed that the Cambodian adolescents had scores comparable with those of children in a clinical setting in the United States and Puerto Rico (Achenbach et al., 1990a). These international comparisons suggest that the Cambodian adolescents living in Site Two reveal psychosocial dis-

stress comparable with that seen in adolescents receiving clinical care. Currently, the clinical meaning of this high level of emotional distress is not known because the relationship between Cambodian symptoms of emotional distress and *DSM-IV* diagnostic categories of psychiatric disorders for Cambodian adolescents and children has not been established. The results of Achenbach's subscales in this survey (Table 3), however, suggest that psychiatric disorders consistent with somatic complaints, social withdrawal, attention problems, depression, and anxiety may be common in this population. The Achenbach results also indicate that teenage girls may be engaged in socially deviant behavior that is not the norm for their society.

Somatic complaints, the most common symptoms of psychosocial distress revealed by these adolescents in this study (e.g., headaches reported "very often" by

**TABLE 7**  
Self-Reported and Parent-Reported Prevalence of Functional Impairments Due to Health Problems and Parent-Reported Prevalence of Fair or Poor Child's Health in Relation to Self-Reported and Parent-Reported Trauma Events Experienced by 182 Khmer Adolescents Aged 12 and 13 Years, Site Two, Thailand, 1990

No. of Child-Reported Trauma Events	No. of Children	Child-Reported Prevalence of One or More Functional Impairments (%)	Prevalence Odds Ratio (95% Confidence Interval)
0	23	13.0	1.0
1	57	3.5	0.3 (0.0-2.2)
2	54	7.4	0.6 (0.1-4.6)
3	31	9.7	0.7 (0.1-4.5)
4-6	17	11.8	1.2 (0.1-9.3)

  

No. of Parent-Reported Trauma Events of Child	No. of Children	Parent-Reported Prevalence of One or More Functional Impairments of Child (%)	Prevalence Odds Ratio (95% Confidence Interval)
0	47	17.0	1.0
1	61	3.3	0.2 (0.0-0.8)
2	49	16.3	1.0 (0.3-3.2)
3	12	8.3	0.4 (0.0-3.4)
4-5	13	0.0	0.0 (0.0-1.2)

31% of sample) are consistent with the studies of Southeast Asian youths resettled in the United States (Carlin, 1985). The Cambodian youths in these studies also commonly expressed physical somatic complaints such as headaches and dizziness. These somatic symptoms are widely believed to be cultural expressions of emotional distress in Cambodian adults and are often the chief complaints of more serious psychiatric illness (Mollica et al., 1987). Weisz and his colleagues (Weisz, 1990; Weisz et al., 1987a,b), who used the Achenbach scales in their cultural studies of Thai children, suggest that somatic symptoms, social withdrawal, and social passivity—compared with anger and aggression—may be characteristic of emotional upset in Southeast Asian children. The presence of PTSD was not indicated in this survey by the Achenbach subscales since a PTSD subscale did not exist at the time of this survey. Nightmares, a common symptom associated with PTSD, however, were reported “very often” in 16% of the Cambodian adolescents in this survey by both parent and child reports (Eth and Pynoos, 1985). Sack and his colleagues (1993, 1994) found the *DSM-III-R* taxonomy for PTSD useful for evaluating Cambodian adolescents close to the age of young adulthood in the United States. The authors are investigating the empirical criterion validity of a PTSD subscale in this sample.

The dose-effect relationships between cumulative trauma and symptoms, and cumulative trauma and measures of functional health status, raise a number of important considerations. First, an association between assessment of trauma and total symptoms was present and was especially strong for parental reports (Table 5). The high prevalence of adolescents in the clinical range and these positive dose-effect relationships support the important belief that violence factors, such as the frequent “shelling and bombings” of the refugee camp, had a major negative impact on the psychosocial well-being of the camp’s adolescent population.

Second, the lack of dose-effect relationships between cumulative trauma and functional health impairment as well as the absence of health-related disability may reflect a differential impact of trauma on emotional symptoms compared with physical health (WHO, 1986). However, it is also possible that this specific population of Cambodian adolescents may be especially “physically” resilient as witnessed by their ability to survive the Pol Pot regime.

Third, the lack of an association between cumulative trauma and social functioning reveals findings similar to those found for Site Two adults (Mollica et al., 1993). Recent epidemiological findings by Sack et al. (1993, 1994) on Cambodian adolescents resettled in the United States provide further support that Cambodian adolescents have positive social functioning in the presence of high symptom levels. It is difficult to know the meaning of this. It may be that the measures of social functioning used in these studies are too insensitive to measure changes in psychosocial behavior and quality of life; it may also be possible that other factors such as religion and cultural expectations override symptom levels to produce high rates of involvement in social activities, such as school, as demonstrated by these surveys.

#### Limitations

Since this is the first community survey of the functional health and mental health status of Cambodian refugee youths in a refugee camp, a number of limitations affect the generalizations that can be made from the survey’s results. First, no attempts were made to diagnose psychiatric disorders according to the *DSM-III-R* criteria. Second, psychiatric and medical examinations were not conducted. Third, the subject sample may be biased because of the oversampling of all children aged 12 and 13 within a given household. Fourth, the clinical significance of the Total Behavior Problem scores in the YSR and CBCL for Cambodian adolescents is not known because comparisons with psychiatric diagnoses do not exist. Studies of Cambodian youths in the United States provide some limited additional information but are, in fact, not comparable because of the impact of the acculturation process on all measures (Kinzie et al., 1986, 1988). Fifth, the cultural validity of PTSD in Khmer youths is unknown (Sack et al., 1994) and will not be successfully validated in Khmer culture until valid and reliable scales for PTSD in English-speaking children are forthcoming and applied to Cambodian youths (Yule and Williams, 1990). Sixth, while the differences in parent reporting compared with children’s reporting of trauma experiences and reactions to stress have been well documented (Bader and Rosenfeld, 1974; Peterson et al., 1991), it is not known why these differences exist. The youths may be more affected by the trauma than their parents realize and may not want to burden their parents with this knowledge. The adolescents may feel themselves less distressed

than their parents because the adolescents consider normal many behaviors the parents consider deviant. Similarly, while the parents may not have an accurate perception of their children's trauma, they may be in the best position to observe the emotional status of their children. It is also possible, however, that the parents may have an overly pessimistic impression of their children's mental health status because of their own high levels of depressive symptoms and emotional distress (Site Two survey). These differences need further clarification through field research. Seventh, the lack of objective assessments of educational achievements and social functioning prevents a full consideration of social outcomes. Finally, the study is based on a quasi-experimental cross-sectional design that does not allow for adequate control of developmental processes and histories which affect the outcome of individual differences in behavior problems.

The preliminary results of this survey highlight an important next step in future research: combining multiple indices of psychosocial distress, including psychiatric diagnoses, with objective measures of educational and social outcomes. Ethnographic and clinical case studies in Khmer will also help determine the cultural meaning and impact of trauma on children's symptoms and behaviors (Susser and Watson, 1971).

**Conclusions**

This survey strongly suggests that high levels of emotional and behavioral problems may be present among refugee adolescents. Health care providers and public health officials are reminded by this survey that somatic symptoms in traumatized adolescents may be a sign of more serious psychiatric illness. Limited negative findings for health status and social functioning may also be disguising a more serious mental health reality for these youths. In particular, the presence of positive social functioning among refugee adolescents should not deter health care providers from diagnosing and treating underlying psychological distress. These survey findings should not be regarded as "normative" for traumatized refugee adolescents. They indicate the risk these young persons have for serious psychopathology and psychosocial disability (Ferdinand and Verhulst, 1995).

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