

Mental Health Status Among Ethnic Albanians Seeking Medical Care in an Emergency Department Two Years After the War in Kosovo: A Pilot Project

William G. Fernandez, MD,
MPH

Sandro Galea, MD, DrPH
Jennifer Ahern, MPH
Sarah Sisco, MPH, MSSW
Ronald J. Waldman, MD, MPH
Bajram Koci, MD, MS
David Vlahov, PhD

From the Division of Emergency Medicine, New York Presbyterian Hospital, Columbia University, New York, NY (Fernandez); the Joseph L. Mailman School of Public Health, Columbia University, New York, NY (Fernandez, Galea, Waldman, Vlahov); the Center for Urban Epidemiologic Studies, New York Academy of Medicine, New York, NY (Galea, Ahern, Sisco, Vlahov); and the Department of Anesthesia, University of Pristina Medical Center, Pristina, Kosovo (Koci).

Dr. Fernandez is currently affiliated with the Department of Emergency Medicine, Boston Medical Center, Boston University, Boston, MA.

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Study objective: The long-term psychological effects of war are underappreciated in clinical settings. Describing the postwar psychosocial burden on medical care can help direct public health interventions. We performed an emergency department (ED)-based assessment of the mental health status of ethnic Albanian patients 2 years after the North Atlantic Treaty Organization-led bombing of Serbia and Kosovo in 1999.

Methods: This study was conducted July 30, 2001, to August 30, 2001, in the ED of a hospital in Pristina, Kosovo. Investigators collected data through systematic sampling of every sixth nonacute ED patient presenting for care; 87.7% of patients agreed to participate. Respondents completed a structured questionnaire, including demographic characteristics, the Short Form-36, and the Harvard Trauma Questionnaire.

Results: All 306 respondents were ethnic Albanians; mean age was 39 years (SD 17.9 years). Of respondents, 58% had become refugees during the war. Two hundred ninety-six (97%) reported experiencing at least one traumatic event during the war; the average number of traumatic events encountered by participants was 6.6. Forty-three (14%) reported symptoms that met *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* criteria for posttraumatic stress disorder; mean Short Form-36 Mental Component Summary score was 42.1 (SD 12.5). Separate multivariable linear regression models confirmed our belief that older age, female sex, less than a high school education, and having experienced a greater number of traumatic events would be associated with more posttraumatic stress disorder symptoms and lower Mental Component Summary scores.

Conclusion: Mental health problems among ED patients in Kosovo, particularly among specific vulnerable populations, are a significant public health concern 2 years after the conflict.

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Capsule Summary

What is already known on this topic

War and other forms of violence increase the prevalence of post-traumatic stress disorder and decrease general mental health in affected populations.

What question this study addressed

This study examined the prevalence of posttraumatic stress disorder and the mental health status of ethnic Albanians presenting with nonemergency complaints to a Kosovo emergency department (ED) 2 years after the war.

What this study adds to our knowledge

Ninety-seven percent of these ED patients had directly experienced negative consequences of the war. Two years after the event, many patients were still experiencing psychological distress. Demographic factors such as older age, female sex, and not completing high school were more strongly associated with mental distress than the number of traumatic events experienced.

How this might change clinical practice

This study confirms the negative consequences of war, even several years later, and demonstrates how emergency physicians can document them. It invites further study into how the ED might be used to identify and treat patients at high risk for mental disorders resulting from war and other catastrophes.

reported to have a prevalence of 15.8% to 37.4% and persist for a decade or more after various conflicts.¹³ Mollica et al¹⁴ reported an estimated posttraumatic stress disorder prevalence of 26% in Bosnian refugees in Croatia more than 1 year after the end of overt hostilities.

A study of ethnic Albanian Kosovars who immigrated to the United States during the North Atlantic Treaty Organization–led campaign found that 60.5% had symptoms of posttraumatic stress disorder.¹⁹ A population-based study by Lopes Cardozo et al³ conducted in Kosovo shortly after the end of armed hostilities found that approximately 17.1% of the population had symptoms consistent with a diagnosis of posttraumatic stress disorder. Those who experienced war-related traumas were more likely to experience posttraumatic stress and psychosocial dysfunction after the conflict.

Importance

The long-term psychological effects of war are underappreciated in clinical settings.^{8,9,20-22} Physical symptoms, frequently occurring with psychological symptoms, may obscure psychological impairment in a medical health care setting.^{8,9,23,24} These physical complaints can frequently mask serious underlying issues (eg, domestic violence, alcoholism). Physicians frequently miss opportunities to make diagnoses of a primary mental health nature in their clinical practices.²⁴ The evaluation of frequent, somatic complaints can result in a costly burden of care, especially in an emergency department (ED) setting.^{23,24} To date, the prevalence of patients presenting to the ED with mental health sequelae of armed conflict (eg, posttraumatic stress disorder, depression) has yet to be defined. Describing the extent of psychosocial issues in post-conflict settings, however, and demonstrating how these issues correlate with somatic presentations to EDs can help direct public health interventions.

The relation between certain factors that may predispose toward psychological vulnerability or resilience is likely complex. The large number of persons affected directly and indirectly by the war in Kosovo presented an opportunity to investigate the psychological consequences of disasters and the factors that mitigate and exacerbate these consequences. In addition to persons' direct experiences of a disaster, vulnerability to disasters may be socially structured, reflecting the influence of socioeconomic status and other stratifying features, including sex and ethnicity. A heuristic model of vulnerability, developed from research among people living with HIV or AIDS, identifies the intersection of

INTRODUCTION

Background

Fueled by increasing ethnic tensions in early 1998, armed conflict broke out in Kosovo, a southern province of the Federal Republic of Yugoslavia, between ethnic Albanians and the Yugoslav Army. Attempts at negotiating a peace settlement at Roubouillet, France, ended in stalemate in March 1999. In light of widespread human rights abuses by the Yugoslav Army on the Albanian Kosovars, members of the North Atlantic Treaty Organization intervened to halt the forced expulsion and other atrocities of more than half of the ethnic Albanian population in Kosovo.¹ As a result of the conflict, more than 800,000 people fled their homes.² By 2001, many former refugees had returned to a postwar Kosovo that was slowly emerging from the overt crisis.

Several reports have documented the effects of war-related physical and psychological injuries.³⁻⁹ Recent research has demonstrated the significant burden of war on the mental health of civilians.¹⁰⁻¹⁸ For example, during the civil war in Sri Lanka, a prevalence of posttraumatic stress disorder of 27.5%¹² was documented. Posttraumatic stress disorder in refugees has been

spaces of vulnerability that include a variety of social and behavioral determinants of health.²⁵

As is the case in North America and Europe,^{23,24} a large proportion of ED patients in Kosovo present for care with seemingly routine medical complaints. These medical issues frequently have a social or psychological component. For example, among ED patients presenting with somatic complaints, 42% of respondents in one study were found to have primary psychological condition.²⁶ The work described in this exploratory project aimed to assess the role of certain factors that shape psychological vulnerability and resilience in the face of disaster. In particular, the authors were interested in the factors associated with long-term postwar psychological sequelae among patients presenting for routine care in an ED 2 years after the Kosovo crisis.

Goals of This Investigation

The purpose of this pilot project was to document the mental health status of ED patients 2 years after the war in Kosovo. We were particularly interested in exploring the ED setting to identify the burden of mental health dysfunction among persons presenting to EDs in the aftermath of war.

METHODS

Study Design

This project was designed as a cross-sectional questionnaire study conducted from July 30, 2001, to August 30, 2001, at an ED in Pristina, Kosovo. The sampling plan was devised as a systematic sample, selecting every sixth eligible person presenting for care to the ED.

Setting

The study was conducted in the ED of a large regional hospital in Pristina, Kosovo. The daily census in the ED is approximately 130 patients, and approximately 13% of patients are admitted to the hospital. It is the major teaching hospital within Kosovo, with training programs in medicine, surgery, anesthesia, pediatrics, obstetrics and gynecology, and many other subspecialties. There is no formal didactic program approved for emergency medicine in Kosovo. Despite the fact that much of the primary health care infrastructure that existed in Kosovo during the 1990s had been restored 2 years after the conflict, many patients still lacked access to primary care, and the ED was the most common source of primary care for many in Kosovo.

Selection of Participants

Participants were enrolled in the study if they were aged 18 years or older and presented to the ED with a stable, non-life-threatening presenting complaint. Patients were excluded if they were unable to give written consent or if they were deemed by the physician on duty in the ED to have an urgent or emergency medical condition (ie, to be unstable or have a life-threatening complaint). According to standard triage protocols, a person was deemed stable (ie, had a non-life-threatening presenting complaint) if they had stable vital signs in the triage area, did not exhibit extreme distress or pain, did not have alterations in their mental status, and could give written consent.

Data Collection and Processing

Research staff, after receiving several hours of survey research training by the principal investigator, approached stable patients waiting to be treated in the ED. Devised as a systematic sample, every sixth stable patient presenting for care was approached to participate in the study. Because of logistic constraints, the study was conducted between 10 AM and 10 PM. On giving written consent, each participant completed a 20-minute self-administered structured questionnaire. Before commencement of the study, all participating institutions approved the protocol.

Methods of Measurement

The survey contained questions about the participants' demographic information (eg, age, sex, annual income, municipality of origin). To evaluate overall mental health, the Mental Component Summary Scale score from the Short Form-36 was used.²⁷ The Harvard Trauma Questionnaire was used to identify the measure of posttraumatic events experienced, as well as symptoms of posttraumatic stress in the respondents.^{14,24} The Harvard Trauma Questionnaire and Short Form-36 have been used extensively in a variety of international settings.^{3,7,10,14,22,28-31} We used versions of these 2 screening tools that had been previously translated into and back-translated from Albanian and used in a population-based study in Kosovo by Lopes Cardozo et al.³

Outcome Measures

Overall, lower Short Form-36 scores and higher Harvard Trauma Questionnaire scores indicate lower function and worsening traumatic symptoms, respectively. We scored the Mental Component Summary

according to the Short Form-36 Interpretation Manual.²⁷ Health measures derived from the Short Form-36 are scored on a scale from 0 to 100.²⁷ A standardized set of baseline mean Short Form-36 scores for the general population in Kosovo before the conflict unfortunately does not exist. However, there has been work to develop normative data from a number of other countries in Europe and in North America.²⁹⁻³¹ For example, mean Short Form-36 Mental Component Summary scores were established among several countries (Denmark, France, Germany, Italy, Netherlands, Norway, Spain, Sweden, United Kingdom, and United States) and found to range from a low of 49.7 in the Netherlands to a high of 52.7 in Italy.³¹ The Harvard Trauma Questionnaire was scored according to a 2-part instrument: the first part assesses the exposure to various traumatic events; the second part seeks to assess specific symptoms of posttraumatic stress disorder. Symptoms in the Harvard Trauma Questionnaire are based on symptoms from the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*.²⁵ We used the Harvard Trauma Questionnaire to determine which persons met diagnostic criteria for potential posttraumatic stress disorder diagnosis. We used the algorithm created by the Harvard Refugee Trauma Group to assess whether participants had symptoms consistent with a diagnosis of posttraumatic stress disorder.^{14,24}

One of the major challenges to conducting postwar mental health research beyond Western Europe and North America is the paucity of established benchmark data in a given area. As stated previously, the Harvard Trauma Questionnaire and the Short Form-36 have been used in several other similar settings. However, because of the limited amount of baseline prewar mental health research specifically in Kosovo, analyses in this article are based on only numeric differences in outcome scores. The clinical implication of these differences between different points on each of the outcome measure in this study has yet to be established.

Primary Data Analysis

To ensure overall data quality, several measures were taken. A single person entered all data into a computerized database. Explicit rules were followed to ensure consistency in the coding of data (eg, skipped questions, missing data). To avoid data errors, routine comparisons were made between the hard copy data forms and the keyed data, whereas computer edits were done to check for out-of-range codes and internal inconsistencies. The SAS System (version 8, SAS Institute, Inc.,

Cary, NC) was used to carry out statistical analysis. We carried out bivariate analyses to identify individual correlates of worsening mental health function, as quantified by the Short Form-36 and Harvard Trauma Questionnaire instruments. For the multivariate analyses, we identified a set of factors a priori that we thought were likely predictors of the 2 mental health outcomes: age, sex, education and employment status, and number of traumatic events. Overall, we sought to identify the association between psychosocial factors, posttraumatic stress disorder (as determined by the Harvard Trauma Questionnaire), and mental health dysfunction (as determined by the Short Form-36 Mental Component Summary score) while controlling for relevant sociodemographic variables.

RESULTS

Characteristics of Study Subjects

A total of 349 ambulatory patients were approached in the ED to complete the survey. Of these, 306 individuals, 194 (63%) male patients and 112 (37%) female patients, agreed to complete the questionnaire, which represents a participation rate of 88%. All respondents were ethnic Albanian and were born in Kosovo. The major demographic information is presented in [Table 1](#). Overall, mean age was 39 years (SD 17.9 years). Of the respondents completing the survey, 50% had at least a high school education, 32% were currently employed, and 66% were currently married. Of the respondents, 58% had become refugees during the war, whereas the

Table 1. Demographic information on an ED-recruited sample of Kosovars 2 years after the war in Kosovo (N=306).

Characteristic	No.	%
Male sex	194	63.4
At least high school education	151	49.5
Current employment	96	31.6
Marital status		
Married	201	65.9
Never been married	86	28.2
Other	18	5.9
Currently lives with spouse/partner	199	65.3
Currently smokes cigarettes	149	49.0
Currently drinks alcoholic beverages	44	14.6
Became refugee during the war	175	57.6

rest were either internally displaced or remained at home.

In our sample, the major reasons for the ED visits by the participants were for complaints of the various organ systems: orthopedic (32%), gastrointestinal (23%), urinary tract (16%), cardiovascular (10%), infectious disease (4%), pulmonary (4%), endocrine (3%), and other (8%). Disorders of an orthopedic, gastrointestinal, or urinary tract nature made up nearly 70% of all presenting complaints to the ED. In comparison, only 2% of participants presented to the ED with complaints of a primary psychological nature.

Main Results

Table 2 summarizes respondents’ exposure to traumatic events. Nearly all respondents (97%) had at least 1 traumatic exposure. Of the respondents who had traumatic experiences, 71% had been denied food or water; 66% had a lack of shelter; 93% had been exposed to a combat situation; 46% had been close to death; and 44% had been tortured. The average number of traumatic events encountered by participants in this sample was 6.6 (SD 3.2). Overall, 14% of respondents reported symptoms consistent with posttraumatic stress disorder.

Table 2. Reported traumatic exposures by residents of Kosovo recruited through the ED 2 years after the war in Kosovo (N=306).

Traumatic Experience	Experienced the Event Themselves, No. (%)	Experienced, Witnessed, or Heard of a Particular Event, No. (%)
Combat situation	280 (92.7)	291 (96.4)
Lack of food or water	215 (71.0)	278 (91.8)
Lack of shelter	199 (65.5)	266 (87.5)
Ill health without access to medical care	185 (61.1)	265 (87.5)
Forced separation of family members	166 (55.3)	232 (77.3)
Other frightening or life-endangering situation	149 (49.7)	178 (59.3)
Being close to death	140 (46.2)	242 (79.9)
Torture	134 (44.4)	180 (59.6)
Forced isolation	132 (43.6)	237 (78.2)
Family member or self involved in fighting during war	101 (33.3)	183 (60.4)
Murder of family or friend	95 (31.4)	166 (54.8)
Unnatural death of family or friend	76 (25.1)	142 (46.9)
Serious injury	41 (13.5)	166 (54.6)
Murder of stranger or strangers	38 (12.6)	209 (69.2)
Imprisonment	37 (12.2)	192 (63.4)
Lost or kidnapped	23 (7.6)	243 (79.9)
Rape or sexual assault	0	238 (79.1)

The mean Short Form-36 Mental Component Summary score in this sample was 42.1.

Table 3 shows the regression models showing the explanatory variables that attempt to predict Harvard Trauma Questionnaire trauma symptom score and Mental Component Summary scores. Both the Harvard Trauma Questionnaire Trauma Score and the Short Form-36 Mental Component Summary were approximately normally distributed (Figure), and assumptions of logistic regression were satisfied in both models. Separate multivariable linear regression models confirmed our prediction that Harvard Trauma Questionnaire posttraumatic symptom score and Short Form-36 Mental Component Summary score would be associated with older age (β 0.007, 95% confidence interval [CI] 0.004 to 0.01; and -0.25 , 95% CI -0.32 to -0.17 , respectively); female sex (β 0.13, 95% CI 0.25 to 0.02; and -4.42 , 95% CI -1.69 to -7.15 , respectively); less than a high school education (β 0.13, 95% CI 0.25 to 0.01; and -2.93 , 95% CI -0.07 to -5.78 , respectively); and having experienced a greater number of traumatic events (β 0.04, 95% CI 0.02 to 0.06; and -0.79 , 95% CI -1.19 to -0.40 , respectively). These models suggest that a person who had directly experienced 4 war-related traumatic events, for example, would have a Short Form-36 Mental Component Summary score that was 0.79 points lower than a person who had experienced only 3 events, provided all other factors were equal. It should be noted, however, that being 10 years older (-2.5 points), being female

Table 3. Regression model with explanatory variables predicting Harvard Trauma Questionnaire trauma score and Short Form-36 Mental Component Summary score (N=306).

Variable	Harvard Trauma Questionnaire Trauma Symptom Score			Mental Component Summary Score (Short Form-36 Mental Component Summary)		
	β	Lower CI	Upper CI	β	Lower CI	Upper CI
Intercept	1.62	1.42	1.82	52.61	47.88	57.34
Sum traumatic events	0.04	0.02	0.06	-0.79	-1.19	-0.40
Less than a high school education	0.13	0.25	0.01	-2.93	-0.07	-5.78
Currently employed	-0.06	-0.19	0.06	0.98	-1.9	3.87
Female sex	0.13	0.25	0.02	-4.42	-1.69	-7.15
Age, y	0.007	0.004	0.01	-0.25	-0.32	-0.17

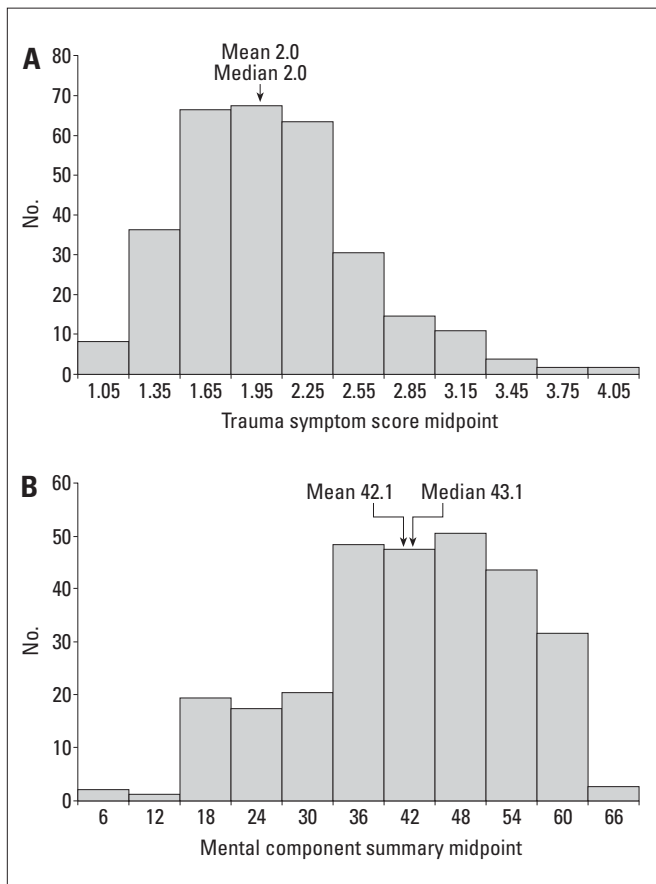
(−4.4 points), and not having completed high school (−2.9 points) were associated with greater drops in the Short Form-36 Mental Component Summary score than experiencing 3 additional traumatic events (−2.4).

LIMITATIONS

There were a number of limitations to this study. Because a cross-sectional study design determines exposures and outcomes simultaneously, causality cannot be established.³² Furthermore, a cross-sectional study design allowed only a snapshot of an ongoing situation. However, the information gleaned from a cross-sectional study can help to focus attention and future resources on important public health issues, thereby aiding in long-term public health planning.^{32,33} Strictly speaking, a direct comparison cannot be made between

our sample and the population-based study carried out by Lopes Cardozo et al.³ However, although not directly comparable, both studies suggest a high prevalence of postwar mental health dysfunction. A persistently high prevalence of posttraumatic stress disorder after conflict situations, torture, or forced migration has been frequently described elsewhere.^{3,7-22,34-39} The participants in this study were enrolled by systematic sampling. Although not as powerful as a randomized sample, it is methodologically more rigorous than a convenience sample. Also, it is possible that participants drawn from a clinical setting may exaggerate the true prevalence of posttraumatic stress disorder than would a nonclinical sample.^{32,33} Research on mental health screening in the ED setting is fairly uncommon. Accordingly, there is a dearth of ED-based mental health research in the international setting. We studied ED patients 2 years after a humanitarian crisis in an impoverished region within the Balkans, which presents 2 problems: a paucity of comparable ED-based research to draw from and limited external validity with which to compare our results. Therefore, the generalizability of our findings is limited to populations that closely parallel our study sample.

Figure. Histograms showing distribution of 2 main outcomes in this study: **A**, the Harvard Trauma Questionnaire trauma symptom score and **B**, the Short Form-36 Mental Component Summary score.



DISCUSSION

Two years after armed hostilities in Kosovo, our data suggest that there remains a high prevalence of mental health symptoms among persons presenting to an ED in postwar Kosovo. In our sample of 306 patients presenting to an ED in Pristina, Kosovo, nearly all the participants reported having experienced at least 1 traumatic event during the conflict. In addition, 14.1% of respondents reported symptoms that met criteria for posttraumatic stress disorder 2 years after the end of overt conflict. The mean Mental Component Summary score reported in this sample was lower than mean Mental Component Summary scores from other comparable cities. Older age, female sex, lower education, greater traumatic event experience, and unemployment were predictors of poor mental health in this population.

The number of traumatic exposures reported by participants in this sample was high. Nearly all participants (97%) experienced at least 1 traumatic exposure. The mean number of exposures reported by participants was 6.6. The types and prevalence of traumatic events encountered in our study is similar to those found by authors in other postwar settings.^{3,34-37}

Although population norms for the Short Form-36 in Kosovo do not exist, the mean Short Form-36 Mental Component Summary score (42.1) from respondents in our sample was lower than benchmark data for other European countries.³¹ However, according to the limited background data on this population, the clinical significance of this low Short Form-36 Mental Component Summary score remains to be determined.

In 2 multivariate models, older age, female sex, less than a high school education, and cumulative trauma were predictive of worse Harvard Trauma Questionnaire and Short Form-36 Mental Component Summary scores. Our data concur with the findings of others.^{3,10,11,14,40} However, these variables may have complicated relations with mental health in the postwar context, and other unmeasured variables may also be important determinants of posttraumatic stress disorder.⁴⁰ For example, after the September 11, 2001, terrorist attacks in New York City, women were twice as likely to experience posttraumatic stress disorder than men; however, this association weakened after adjustment for important potential mediators such as responsibilities for child rearing.⁴¹

In this pilot project, we found that a considerable number of people presenting to an ED in Kosovo still require mental health intervention, despite a substantial investment of humanitarian aid from the international community. In an era in which violence is a palpable threat to civilians in the United States and abroad, this study illuminates the burden that postdisaster mental health dysfunction may have on medical care in the ED setting. This preliminary account of postdisaster mental health screening in the ED setting lays the foundation for future work on the topic. Further investigation on the identification of high-risk individuals, as well as research evaluating the efficacy of ED-based mental health screening, is warranted. Emergency physicians, particularly those involved in humanitarian relief work, should bear in mind that more than 2 years after the end of overt hostilities, a substantial proportion of patients presenting in an ED setting with "medical" complaints may still experience mental health consequences of traumatic event experiences.

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Address for correspondence: Sandro Galea, MD, MPH, DrPH, Center for Urban Epidemiologic Studies, New York Academy of Medicine, 1216 5th Avenue, Room 553, New York, NY 10029; 212-822-7378; fax 212-876-6220; E-mail sgalea@nyam.org.

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