War related stress disorder among Bosnian and Croatian refugees

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Abstract Objectives: To study the impact of the Serbian invasion on Bosnia Herzegovina. To test the null hypothesis suggesting no real difference in the suffering between the Bosnian and Croatian refugees. Design: A cross-sectional two-stage random sampling technique. Two structured questionnaires and direct interviews. Settings: Greater Zagreb and Split areas of the republic of Croatia. Target population: All Bosnian and Croatian refugees who migrated to Zagreb and Split at the time of the study. Subjects: An equal matching number of randomly selected Bosnian and Croatian refugees. Criteria of inclusion: Arrived within 6 months of the invasion. Lived in Split and Zagreb area in camps and dwellings provided by the Croatian government. Aged 17-65 years. Main outcomes: Exposure to stress provoking events e.g. rape, attack during the migration, and suffering from injuries is about twice more among Bosnians than Croatians. Level of satisfaction regarding the living conditions is 50% less among the Bosnians. Depression and anxiety were found among both groups, although twice as predominant among Bosnians. Conclusion: Both sides of the conflict experienced war-related stress disorders. Bosnians suffered more than Croatian refugees living in the same camps who immigrated at the same time from Bosnia Herzegovina. Recommendations: Immediate action is required to stop the continuous sufferings of civilians. Urgent preventive and therapeutic programs are required to counteract the stress reactions to this war.

Keywords: Bosnia Herzegovina, war trauma, post traumatic stress, rape, refugee

The real impact of war on the economic and psycho-social well-being of a community is not easy to assess, and its effects on the health of the individuals are difficult to document. The sudden massive emigration of large populations from their homeland in a short time creates tremendous social, psychological and public health hazards. Refugees may exhibit a higher incidence of psychological disorders compared either to those remaining in their homeland or to the host population. Such people, having suffered persecution, might well exhibit paranoia, anxiety or depression. Several studies in recent years bear witness to the increase in medical problems among war refugees. War-related violence remains the most important public health risk. Civilians on all sides of the conflict are usually intentional targets of physical, social and sexual violence.

The Serbian invasion of Bosnia Herzegovina drove almost one million people within a few days to settle as refugees in Croatia, Slovenia, Hungary and other European countries.

In this war, perhaps more than in any previous local conflicts, most independent reports referred to what has been categorized as ethnic cleansing, systematic rape, atrocities of concentration camps, mass graves, etc.

Recent studies revealed disruption to basic health services, severe food shortages in eastern Bosnia's enclaves, and widespread destruction of public water and sanitation systems. The risk of pneumonia and malnutrition may increase during the winter of 1995 when the effects of disrupted water and sanitation systems are more likely to promote upper respiratory disease transmission.

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In the central Bosnian province of Zenica, perinatal and child mortality rates have increased twofold since 1991. The crude death rate in one Bosnian enclave between April 1992 and March 1993, was four times the pre-war rate. Prevalence rates of severe malnutrition among both adults and children in central Bosnia have been increasing since November 1992.10

Bjorn and Eriksson recently examined released Bosnian prisoner survivors from "ethnic cleansing camps". They found that 76% have a history of physical abuse, 17% systematic physical torture and 89% psychic torture and some serious somatic problems. Thirty-two percent were recommended a psychiatric contact in the community where they will stay permanently, because of high probability of developing symptoms of post-traumatic stress disorders (PTSD).11

To study the impact of this war on ethnic groups, and to test the null hypothesis that there is no real difference in the amount of stressful events and sufferings, psychological and otherwise, between Bosnian and refugees, this study was planned.

Methodology After acquiring the necessary permission, an attempt was made to identify all Bosnian and Croatian refugees who had migrated to Zagreb and Split at the time of the study. To that end, a computer printout was obtained from Mercy International.12 The information available included refugee name, age, gender, time of arrival and address in Croatia. Only refugees whose data satisfied the following requirements were included in the study.

- arrived within 6 months of the invasion
- lived in Split and Zagreb area in camps and dwellings provided by the Croatian government
- aged 17-65 years

At the time of the study, the number of dwellings, compounds, and/or camps provided by the Croatian government for the refugees was 140, inhabited by 49150 refugees who fulfilled the study criteria. Among these were 25700 Croatians and the rest were Bosnians.

The type of residence was used as a unit of a cluster i.e. Hotel Compound, (Concrete) Camp, (Tent) Camp.

A two-stage sampling technique was applied to select the required sample size. At first stage 10% of the clusters were selected using a simple random sampling method. At the second stage 1228 persons (or 2.5% of the total population) were chosen using proportion allocation scheme from each selected cluster of equal numbers of Croatians and Bosnians.

After matching criteria of gender, marital status, and education were considered, 72 were excluded. This resulted in 1156 subjects with 578 Bosnian and 578 Croatian refugees.

To test the impact of psychological stress on the refugees the Self-reporting questionnaire (SRQ-20)13 was used. Furthermore, Rahim's Anxiety Depression Scale (RADS) containing 39 somatic symptoms was implemented.14

The Self-Reporting Questionnaire (SRQ) is a simplified derivative from Goldberg's General Health Questionnaire (GHQ).15,16 It was introduced by a group of international researchers under the auspices of WHO.17 Initially applied and validated in a multi-center collaborative study in four developing countries (Sudan, India, Philippines and Colombo), it has since been repeatedly validated as a screening instrument for detection of minor psychiatric morbidity in an increasingly growing number of studies conducted in more than 35 countries.

On the basis of its validity and reliability across cultures and in different languages, it has recently been recommended by the WHO as a standard research instrument applicable worldwide, particularly in developing countries.18

Rahim Anxiety Depression Scale (RADS) is composed of 39 items, of which 20 are identical with SRQ and 18 cover somatic correlates of anxiety and/or depression frequently reported by emotionally disturbed individuals particularly in developing countries.14 Its validity has been established in both clinical20,21 and community settings.22,23 It has been used in several other research projects.24-26

Scoring: Each of the 20 items of SRQ and the 39 items of RADS was given a score of zero (0) or one.

A score of 1 indicates that symptoms were present during the past month, a score of (0) indicates that symptoms were absent.

A pilot study was carried out in a camp not included in the study before the full scale survey. The purpose was to train the interviewers for data collection techniques. As a result, the questions regarding the level of education and rape were modified in its final form.

Over a period of two months, two teams of interviewers were hired. They received training on survey design, research methodology and community diagnosis under the supervision of the author. Team one consisted of 8 nurses (4 Croatian
and 4 Bosnian) who carried out the general, socio-epidemiological questionnaire.

The post traumatic stress effect was assessed separately by the second team, consisting of four locally recruited psychologists. Stress was tested in this study according to the presence of either anxiety, depressive symptoms or the known psychological manifestation of sympathetic reflex arousal.27

All investigation instruments were translated into the local Yugoslavian language. The translation was then checked by re-translation into English. All information was gathered through interviews under the supervision of the author. In the study period, a reliability test was done by the investigator checking on 10% of the filled questionnaires and Kappa index was used which resulted in 85% agreement.

Satisfaction with living conditions in the camps, immigration life, and home situation was registered.

Data handling and analysis: Frequencies, cross tabulations and contingency table statistics (Chi square, etc) were performed using SPSS PC+39 and EP15 v. 5.19 for qualitative variables. Determinants of the post traumatic stress were derived by using logistic regression technique.

Relative risk (RR) were calculated to demonstrate the differences between the two samples. Chi-square and 95% confidence limits were calculated to test the statistical significance of the results.

Results Fifty-three percent males and 47% females with equal numbers from each group were entered in the study. Education level was matched according to the years of education (6,-10,-12,-14,-16,-16+ years). Current marital status was also matched (Yes, No) with 59% currently married.

Comparison between the Bosnians’ and the Croatians’ analysis was conducted to explore stress provoking events and stress reaction among both groups (Table 1, 2).

a) The knowledge of somebody who had been exposed to stress provoking events: By enquiring about direct war crimes, rape appears to be a common phenomenon (Table 1). Eighty-eight percent of Bosnians knew someone who was raped compared to 53% of Croatians. The relative risk was 1.67 with a confidence limit of (1.53 < RR < 1.81) and P value= 0.000001. This indicates that their knowledge of exposure to stress-provoking events is twice more than the Croatians.

Seventy-one percent of the Bosnians claimed to be attacked during the journey compared to 24% Croatians. The RR is equivalent to 3.0 with confidence limits of (2.57 < RR<3.51), P=0.000001. This indicates that 3 times more Bosnians were attacked during the journey than the Croatians.

Approximately twenty-three percent of the Bosnians claimed that they experienced war injury compared to 16% of Croatians. The RR is equivalent to 1.40 with a confidence limit of (1.10<RR<1.78) and P=0.0045.

Seventy-one percent of the Bosnians believed this was an ethnic cleansing war while 41% of Croatians agreed with them. The RR is equivalent to 1.7 more on the Bosnian belief with a 95% confidence limit ranging from (1.53 < RR < 1.92) and P=0.000001.

In comparing the level of satisfaction regarding the living conditions of the groups, only 35% of the Bosnians were satisfied while 71% of Croatians claimed the same. The RR of satisfaction was 2.2 in favor of Croatians with a 95% confidence interval ranging from (1.91<RR<2.53) and P=0.0001.

b) Stress reactions: When measuring the stress reaction (Table 2), depression and anxiety were predominant among the study group, 62% of the whole sample proved to have signs and
symptoms of depression. Among those, 82% of Bosnian and 42% of Croatian refugees have developed the disease. The RR of depression was 2.00 on the side of Bosnians with a 95% confidence interval ranging from (1.80<RR<2.22).

Anxiety was manifested in 54% of Bosnians compared to 30% Croatians; RR 1.80 and confidence interval of (1.55<RR<2.09).

Determinants of post traumatic stress were derived by using stepwise logistic regression. Table 3 presents determinants along with corresponding odds ratio. The predictive percent of logistic regression was reported to reflect the usefulness of the model in calculating post traumatic stress.

It was found that both ethnic groups and age were significant determinants of rape. The Bosnians were 7 times more likely to witness a case of rape than the Croatians.

Table 3 - Variance of post traumatic stress (Significant factors in the logistic regression equation)

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>Determinants</th>
<th>B</th>
<th>Exp (B)</th>
<th>O.R.</th>
<th>P-value</th>
<th>Correct predictive %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rape</td>
<td>Ethnic group</td>
<td>1.9086</td>
<td>6.7437</td>
<td>&lt;0.0001</td>
<td>76.47%</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age</td>
<td>-0.0143</td>
<td>1.0144</td>
<td>0.26</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Discussion

This study has its obvious limitations, as it was applied among refugee camps. Constraints in the life of these refugees, and living in a war situation make such a large epidemiological study difficult to conduct and divert it from the ideal design. For example, among some of the tools used there were certainly inclusive or too generalized questions. It would have been more objective if the question regarding rape for example was limited to raped persons, or even extending to the immediate family members. This question was included however, in the pilot phase, and found too sensitive, hurting and created logistic difficulties. It was decided to modify it to suit a large scale study. Furthermore, the awareness of this point motivated the author to elaborate the investigation of these issues in a sub-sample which is to interview under more relaxed and reliable circumstances. This follow up is visualized as a longitudinal survey not only to provide intensive information of representative subgroups but also to test the short term outcome of whatever manifestations noticed in the initial state developed in this paper.

Questionnaires were translated into the Bosnian language and perhaps applied in this culture for the first time. However, these instruments have been already validated and found to be reliable in more than 35 countries and 40 cultures allowing a presumption of its likely applicability to most other cultures including Bosnia.

This study, even with the limitations mentioned is attempted in order to provide a broad and detailed account of the conditions that affected some aspects of the health status of Bosnian and Croatian refugees, soon after their arrival in Croatia in Ex-Yugoslavia. The results of this study confirmed the findings of numerous previous investigators, that war has a devastating effect on humanity. Refugee populations proved to have a high rate of psychiatric, non-psychiatric and social morbidity.

The psychiatric condition most commonly related to war is Post Traumatic Stress Syndrome (PTSD) first recognised and its diagnosis was developed during the Vietnam War. Its prevalence rates varying widely between 12 and 54% reported from non-serving Vietnam veterans.

Most recent studies indicate that refugees have significant rates of anxiety, affective disorder, dissociate symptoms. Some highlight a higher rate of somatic presentation. Non-organic blindness was found to occur in older Cambodian women refugees. The Vietnam war led to high rates of substance abuse and behavioral disturbance. Ex-prisoners of war have a tendency to higher rates of depression and psychiatric illness.

Bosnia has the making of a bad war from the psychatraic point of view. In essence it is a civil, ethnic and religious war. Former neighbours fight each other in and around their homes. Goals are not clear and the conflict is prolonged. There is a direct threat to civilians, including families. The fighters are not all professional soldiers - rather, many are driven by obligation or ideology. Atrocities of various types have been reported. The media have covered mass graves and systematic killings. Eye-witnesses report excessive use of alcohol as a stimulant or disinhibitor. There are serious problems of provision of basic supplies and medical services. All these factors increase the psychological pressures on civilians as well as soldiers.

The possibility of a sympathetic interviewer has been considered. To minimize such expected bias, Bosnian interviewers were allowed to interview Croatian and vice-versa. Furthermore, clear instructions were put in front of the interviewers not to be sympathetic with any stories.

In such large scale studies, there is usually more chance of one of the subjects interviewed being raped, more tendency to grieve over the knowledge
of the rape of a relative or even somebody whom they knew. Such possibility of bias in over-reporting and willingness to disclose suffering can occur.

Furthermore, it has been noticed in this study that the ratio of Bosnian versus Croatian who have physical injury is much lower than the seven- or eight-fold difference in "knowing of somebody who was raped". The same difference was found in knowing somebody, of being attacked whilst traveling, or even being dissatisfied with the living conditions in the camps. This might be explained by a possibility of over-reporting.

The tendency for over-reporting is likely to have been reduced by the fact that most physical injuries must have healed during the interim period between immigration and being interviewed. To counteract this over-reporting, a reliability test was done by the investigator checking on 10% of the filled questionnaires, and Kappa index was used which resulted in 85% agreement.

In general the results of this study refuted the original null hypothesis. It is clear however that the amount of stressful events and suffering, psychological or otherwise between Bosnians and Croatians are not similar.

Among the sample interviewed, Bosnians have known somebody who has been exposed to stress provoking events as much as one and a quarter fold and up to threefold more than the Croatians.

Almost twice as many Bosnians believed that this is an ethnic cleansing war than Croatians. These are not surprising results since the pressure faced by the Bosnians was indescribably cruel.

In comparing the level of satisfaction regarding the living conditions of the groups, about two thirds of the Bosnians were dissatisfied, while only about a third of the Croatians claimed the same. This was probably because the Croatian government was accommodating their Croatian refugees in the better side of the camps and supplying them with rations and medical care to help improve their conditions. On the other hand, the Bosnians lacked such facilities.

When measuring psychiatric morbidity, more than half of the whole sample proved to have signs and symptoms of depression and anxiety. Among those, Bosnians suffered two-fold more with depression and 12% more with anxiety. This difference is statistically significant. This result is expected since most Croatian refugees have families in Zagreb and this will lead to less hardships.

These variations of findings may be explained by the fact that although the Croatians were exposed to the same war crimes, the magnitude of war-related violence was more a burden on the Muslim side of the conflict. This violence involved physical, psychological and sexual abuse. Females were more likely to develop war trauma than males. Rape proved to be commonly known in this sample and was more among Muslims than Croatians. This study is another scientific evidence that rape and ethnic cleansing were used as war strategies.

In conclusion, although this study shows that both sides of the conflict experienced war related stress, yet the study supported the view that Bosnians suffered more than Croatian refugees living in the same camps who migrated at the same time from Bosnia Herzegovina.

The psychiatric and social impact of this war may remain a major public health concern, and the high rates of other chronic disorders should receive adequate attention from health care providers.

Recommendations Immediate action is needed to stop the suffering of Croatian, Bosnian and Serbian civilians. Further research is needed to guide future preventive and therapeutic programs towards the amelioration of both current and delayed post-traumatic stress reactions remaining from the Serbian invasion of Bosnia.

Theoretically the best response to the psychiatric problems of the war for the general population would be to fund mobile teams of local people tasked with facilitating access to assessment, debriefing, and if necessary, formal psychiatric treatment. Such teams can also take on an out-reach role in attempting to contact previous patients lost to follow-up during the war, although this presupposes the continued existence of medical records and the ability to locate individuals. Previous psychiatric treatment facilities would have to be rebuilt or reopened where necessary.

Empirical research would help assess and also raise and maintain awareness of specific problems such as those of children and the displaced.

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References


12. Mercy International (MI), Switzerland. An international humanitarian non-profitable, non-religious organization registered with the UNHCR and working in disaster areas.


ملخص

خلفية:
تشير التجارب المجرة على الحيوانات والدراسات حول الإنسان إلى دور الأرجنين فازوريسين (أ. ف. ب.) أو التحفيز المستمر - في تأثير إفراز الماء الملاحظ في حالات قصور الكظر وقصور الهرمية. أما البحوث حول هذه الظاهرة في حالات قصور النخامي فإنها قليلة جدًا.

الهدف من الدراسة:
هو أن نقدر مدى انخفاض إفراز الماء في حالة قصور النخامي مع عوز الأرجنين فازوريسين.

التصميم:
دراسة مستقبليّة بواسطة اختبار يتمثل في إعطاء كمية عالية من الماء.

مكان الدراسة:
قسم أمراض الغدد الصماء مركز بيار وماري كوري - الجزائر.

الحالات:
عشرون مريضة أُصيبت بعد الوضع بقصور النخامي (متلازمة شيهمان) مع قصور النخامي الأمامي الذي بات مؤكداً ومع إفراز منخفض لـ (أ. ف. ب.). وقد قمنا بإعطاء كمية عالية من الماء في نفس المريضات وذلك قبل أي علاج، ثم بعد التعويض بالكورتيزول وباءولوجونات الدروبة. أخذنا 12 امرأة سوية للمقارنة.

المعايير الرئيسية للبحث:
حجم البول - أسمولية المصلى والبول - إفراز الماء (أ. ف. ب.) البولي.

النتائج:
قد تبين أن إفراز الماء (أ. ف. ب.) مكثف ودرجة متشابهة في النسبة السوية وفي المريضات سواء تلقى العلاج أم لا. إن سوء إفراز الماء بدا واضحاً في المريضات اللواتي لم تلقن أي علاج أما القدرة على التخفيض فإنها قد ارتفعت بعد إعطاء الكورتيزول، ولم تتجاوز أكثر من ذلك بالتيروكسين.

الخاتمة:
إن زيادة الماء (أ. ف. ب.) ليست عاملاً شرطاً في تأثير إفراز الماء إذ إن ذلك التأثير يلاحظ في المصابين بتقلص الماء (أ. ف. ب.) إن هذه النتائج تدفع إلى الاعتقاد بالدور الأول للمعالجة الكلوية غير المربطة بال (أ. ف. ب.) وكذلك العوامل البيئية الهرمية، وكذا طالب بوضع خطط طويلة الأمد علاجية ووقائية لتخفيض حدة المشكلات النفسية والعصبية لكل الصبيان.

منفتح الكلمات:
البوسنة وأفرسك، وخوض الحرب، الشدة ما بعد الرخى، اغتصاب.