

## Prevalence of Mental and Social Disorders in Adults Attending Primary Care Centers in Bosnia and Herzegovina

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**Aim** To determine the prevalence of mental and social disorders in adults who attend primary care health centers in Bosnia and Herzegovina.

**Methods** Sixty-nine family physicians from the Primary Care Research Network in Bosnia and Herzegovina each invited 20 randomly selected patients from their practices to complete the Patient Health Questionnaire (PHQ), which consists of 26-58 questions about symptoms and signs of depression, anxiety, somatization disorder, eating disorders, and alcoholism. A total of 1574 patients were invited to participate in the study. Physicians reviewed the PHQ and calculated the final score, which determined a provisional diagnosis. Definitive diagnosis was determined by further questioning and clinical knowledge of the patient. Data collection was performed between November 2003 and January 2004. Lists of non-participants were maintained by the physicians.

**Results** The response rate was 82%. Of 1285 respondents, 61% were women. At least one type of mental or social disorder was found in 26% of the respondents, and 12% had more than one disorder. Somatization disorder, major depression syndrome, and panic syndrome were experienced by 16%, 10%, and 14% of respondents, respectively, while 5% or less were suffering from eating disorders or alcohol abuse. More women than men had somatization disorder, panic syndrome, and binge eating disorder, while more men than women reported alcohol abuse.

**Conclusion** More than one-quarter of all adults who attended family medicine centers in Bosnia and Herzegovina presented with at least one type of mental or social disturbance. New health policies, strengthened professional training, and accessible support networks need to be developed throughout the country.

The 1992-1995 conflict in Bosnia and Herzegovina resulted in more than 250 000 deaths and over two million refugees and internally displaced people. The trauma of ethnic cleansing, violence, and disrupted lives caused psychological and social breakdown in the adults and children who lived through it (1,2). These psychological disorders continue to be aggravated by interethnic tensions, as well as the political and economic instability in the country. Current and past adverse situations can have a lasting negative effect on the mental health of the people, often resulting in depression, anxiety, and somatization (3,4). Other social problems, such as alcoholism or eating disorders, can also result from trauma that has not been addressed in a timely or adequate manner (5).

Little is known about the prevalence of such mental and social disturbances in the general population in Bosnia and Herzegovina today. A few studies on mental health have been conducted by local researchers inside Bosnia and Herzegovina. This can be partly explained by the fact that they were also affected by the war and its consequences, and choose not to study mental health. One study on posttraumatic stress disorder among family physicians found that among 133 physicians who completed the questionnaire, 80% had experienced a traumatic event during the war, and 18% of them met the criteria for PTSD (6). A second study on anxiety and depression among nurses after the conflict determined that 45% of nurses in Srebrenik and 67% in Tuzla had anxiety, while 39% of the nurses in Srebrenik and 55% in Tuzla had depression (7).

Perhaps the prime reason for the dearth of studies by local primary care researchers is the lack of research experience. Due to current primary care reform program in Bosnia and Herzegovina, newly-trained family medicine specialists are learning about and participating in research.

Funded by the Canadian International Development Agency, the Department of Family Medicine at Queen's University in Kingston has

been working in Bosnia and Herzegovina since 1995 to establish an effective family medicine educational infrastructure. Activities include creating departments of family medicine in four of the five medical schools in Bosnia and Herzegovina with clinical training bases in family medicine teaching centers, establishing and implementing a residency (specialty) program in family medicine, introducing family medicine into the undergraduate curricula, and helping to establish a professional college of family doctors (8). To date, more than 280 specialists have been certified by examination; another 165 residents are in the process of their training in one of 20 family medicine teaching centers or satellite centers. To encourage continuing professional development following the years of specialization training, and to maintain a connection between community-based family physicians and the academic family medicine departments at the medical faculties, a Primary Care Research Network (PCRN) was recently formed. Many of these new family medicine specialists, through their involvement in the PCRN, have collaborated in this study to address the mental and social disturbances among their population.

The aim of this study was to determine the prevalence of mental and social disturbances, ie, rates of depression, anxiety, and somatization, as well as alcoholism and eating disturbances, among people over the age of 18 who attended primary care centers in Bosnia and Herzegovina. These disturbances were selected because of their inclusion in a validated questionnaire that could be administered by the physicians of the newly formed PCRN of Bosnia and Herzegovina.

### **Participants and method**

This was a descriptive study that used a self-administered validated questionnaire, the Patient Health Questionnaire (PHQ). The PHQ consists of 26-58 questions on the symptoms and signs of depression, anxiety, somatization dis-

order, eating disorders (binge eating disorder and bulimia nervosa, specifically), and alcoholism. The PHQ assesses 8 disorders that are divided into threshold disorders that correspond to specific Diagnostic and Statistical Manual of Mental Disorders – 4th edition (DSM-IV) diagnoses, such as depressive disorder, panic disorder, other anxiety disorder, and bulimia nervosa, and sub-threshold disorders in which the criteria for disorders encompass fewer symptoms than are required for any specific DSM-IV diagnosis, such as other depressive disorder, probable alcohol abuse or dependence, and somatization, and binge eating disorder (9). A provisional diagnosis is calculated from the responses, which then must be confirmed by the family physician through clinical questioning using DSM-IV criteria, during a face to face interview, upon completion of the questionnaire. The PHQ is not designed to make definitive diagnoses but rather to identify people at higher risk for having a specific diagnosis. Therefore, the subsequent clinical evaluation to determine whether the diagnosis exists is necessary.

At least 6 studies have examined the reliability and validity of different components of the PHQ or the PHQ in its entirety (the somatic symptom section alone, the depression symptoms alone, or all components together) and all have found good reliability and validity measures (9-14). One study looked at the PHQ in Spanish and calculated a kappa of 0.74, overall accuracy of 88%, and a sensitivity of 87% and a specificity of 88%, which are similar to results in the English version of the PHQ in primary care patients (10). For our study, the PHQ was translated into Bosnian, Croatian, and Serbian languages and then translated back into English by another translator, and any differences in emphasis or meaning were discussed and corrected. It was then pilot tested on 3 physicians in Bosnia and Herzegovina and 5 of their patients. This does not constitute a full psychometric assessment of the PHQ when administered in the

Bosnian, Croatian, and Serbian languages or in the country of Bosnia and Herzegovina. However, the high validity and reliability measures of the PHQ in English and in Spanish, the detailed process of translation that we undertook, and the subsequent pilot testing, make it the most tested instrument of its kind available for use in Bosnia and Herzegovina.

#### **Participants**

This study included participants over the age of 18 who attend primary care centers throughout Bosnia and Herzegovina. Primary care centers (family medicine centers and general practitioner centers) are frequented by all levels of the general population as a gateway to specialist care. There were over 50 centers included in the study. These centers were located in both political entities of Bosnia and Herzegovina (the Federation of Bosnia and Herzegovina and Republika Srpska), included both rural and urban participants, and included participants from all three major ethnic/religious backgrounds (Bosniacs, Croats, and Serbs).

#### **Data collection**

Data collection took place between November 2003 and January 2004 by 69 family physicians that were part of the newly formed PCRN. All participating physicians attended a PCRN conference where they received the questionnaires and consent forms as well as instructions for them and their nursing staff. Data collection was staggered over a two-month period to avoid bias related to consultations on particular days of the week. Each physician collected data one day a week for 2-3 weeks, randomly beginning with one of the first three patients aged  $\geq 18$  years and continuing with every third patient until 20 patients had been reached.

Following completion of the self-administered questionnaire by the participant, the physicians calculated a provisional score according to the questionnaire instructions. Due to a print-

ing error in the response form, physicians could not indicate the diagnosis for other depression syndrome, so this outcome had to be omitted from the analysis. Then, the physicians discussed the results and confirmed any provisional diagnoses, using traditional clinical questioning. Lists of non-participants were maintained by the nursing staff to ensure that denominator data were complete.

The main outcome measures of this study were the confirmed diagnoses of the following mental and social disorders: somatization disorder, major depression syndrome, panic syndrome, other anxiety syndrome, bulimia nervosa, binge eating disorder, and alcohol abuse.

Ethics approval was obtained from Queen's University Research Ethics Board, Kingston, Canada.

## Results

The 69 physicians from the PCRN administered and discussed the PHQ for 1285 participants of 1574 who were invited to participate, ie, the response rate was 82%. Over 60% of participants were women and the age of the participants was almost equally spread over the three age ranges, with an average age of 47 for women and 53 for men (Table 1). Slightly more than two-thirds of the participants were from the Federation of Bosnia and Herzegovina, while the rest were from Republika Srpska, a ratio that reflects the population split between entities.

Among confirmed diagnoses, somatization disorders and other anxiety syndrome were experienced by at least 17% of the respondents, with major depression syndrome and panic syndrome occurring in 10% and 14%, respectively (Table 2). At least 5% or less of the respondents were suffering from eating disturbances or alcohol abuse.

There was uncertainty among physicians with respect to confirming diagnoses (Table 2). In

particular, somatization disorder, major depression syndrome, and other anxiety syndrome were not confirmed in 7-9% of the cases. The remaining mental disorders were unconfirmed in up to 5% of cases.

Considering overall prevalence and comorbidity, over one-quarter of the respondents were suffering from at least one mental or social disturbance, 12% were suffering from two disturbances (Table 3), and almost 5% were suffering from three mental and/or social disturbances. The most frequent comorbidity pattern was somatization and major or other depression syndrome (9.8%) and major or other depression syndrome and anxiety (8.1%), followed by somatization disorder and anxiety (6.4%).

**Table 1.** Demographic data of the adult respondents

Characteristic	No. (%) of respondents
Sex:	
women	763 (60.7)
men	493 (39.3)
Age group (y):	
18-39	405 (31.5)
40-59	482 (37.5)
≥60	398 (31.0)
Region:	
Federation of Bosnia and Herzegovina	885 (68.9)
Republika Srpska	400 (31.1)
Total	1285

**Table 2.** Confirmed mental and social disorders among the adult respondents

Disorder	No. of respondents	Disorder present (%)		
		yes	no	unsure
Somatization disorder	1133	16.1	75.6	8.3
Major depression syndrome	1124	10.1	82.8	7.0
Panic syndrome	1113	13.7	81.0	5.3
Other anxiety syndrome	1123	15.5	75.1	9.4
Bulimia nervosa	1099	1.3	96.5	2.3
Binge eating disorder	1098	3.4	92.3	4.4
Alcohol abuse	1110	5.0	92.6	2.3

**Table 3.** Comorbidity of disorders among the adult respondents

No. of definitive mental or social disorders	No. (%) of respondents		
	women (n = 763)	men (n = 493)	total (N = 1256)
None	571 (74.8)	353 (71.6)	924 (73.6)
1	192 (25.2)	140 (28.4)	332 (26.4)
2*	103 (13.5)	46 (9.3)	149 (11.9)
3	33 (4.3)	23 (4.7)	56 (4.5)
4	13 (1.7)	12 (2.4)	25 (2.0)
5	2 (0.3)	1 (0.2)	3 (0.2)

\*Somatization and major or other depression syndrome was the most common combination.

## Discussion

This primary care, practice-based study suggests that mental and social disorders are still quite prevalent among the adult population attending primary care centers in Bosnia and Herzegovina. However, compared to past studies which focused primarily on refugees, the rates seem to have fallen quite significantly. One longitudinal study by Mollica et al (1) looked at depression soon after the conflict in Bosnia and Herzegovina and found that 39% of 529 Bosnian refugees surveyed met the DSM-IV criteria for depression. Three years later, 44% of those same adults continued to have the disorder. Weine et al (4) conducted a study with 20 Bosnian refugees who witnessed "ethnic cleansing." Through extensive clinical interviews, they determined that 35% of the refugees had depressive disorders. An earlier study in Croatia considered both anxiety and depression in their study on 107 adults who witnessed traumatic events during the conflict in Croatia, and found that 57% had anxiety and 38% had depression (2). Finally, a 1999 study by Godwin et al (15), which was conducted in family medicine education centers in three cities of Bosnia and Herzegovina, found that 62% of the population aged over 18 had at least some feelings of anxiety or depression, 17% of which were feeling extremely anxious or depressed. Additionally, 72% of that same cohort experienced moderate pain or discomfort, some of which could be somatoform in nature.

In fact, the current rates in Bosnia and Herzegovina are not unlike rates in other countries, including ones which have not suffered conflict. A Canadian study determined that anxiety disorders affect 12.2% of the Canadian population, while about 4.1-4.6% of adults had major depression (16). Data from a German study reported that anxiety and somatization disorders were widespread in all age ranges throughout the German adult population (17). In Spain, Baca et al (18) determined that the prevalence of anxiety

disorders was 22% in the primary care population in Spain. This suggests that the mental health of people in Bosnia and Herzegovina is indeed recovering positively following years of conflict and despite ongoing ethnic tensions and political and economic instability in the country.

Data on eating disorders in the Balkan region found rates for binge eating disorders and bulimia nervosa of 3.4% and 1.1%, respectively, which is similar to studies from North America (16,19-21). The rate of alcoholism in this study was lower than expected, since previous studies that considered alcohol abuse in the Balkan region have found higher prevalence rates. One post-conflict study on a group of displaced persons found that 60.5% of men and 8.1% of women were dependent on alcohol (5).

The most severe psychopathology, ie, the presence of three or more disorders, was found in only 4.5% of the sample. This was far lower than the 14-15% rate reported for adults from Oslo by the Norwegian Psychiatric Epidemiological Study (22). Consistent with results from other studies, we found that women had significantly higher rates for comorbidity of somatization disorder and depression or somatization disorder and anxiety than men (23,24). However, in a study of Croatian male soldiers with combat experience, the rate of comorbid psychiatric disorders was 61.9% (25).

Our results have implications for health care policy makers and administrators, as well as for educators. While the psychiatric and social impact of the immediate post-war period seems to be lessening, it will continue to have a significant effect on the health and social well-being of the people of Bosnia and Herzegovina. The prevalence of mental health problems and the lack of confidence in confirming certain psychosocial diagnoses expressed by this group of family doctors points to the need to strengthen this aspect of the training program for family physicians. Health care planners should look carefully at the current level of community services and pro-

grams for people with psychological and mental illnesses.

The limitation of this study is related to the high number of “unsure” diagnoses, which points to the need for more training in clinical questioning for mental or social disorders. Although not all “unsure” diagnoses would become positive cases, it can be assumed that some cases would be confirmed and thus the rates of these disorders would increase among the general population. It might be argued that the clinical evaluation to confirm diagnosis should have been done by specialist psychiatrists; however, in practice, the majority of these diagnoses will be made by family physicians or general practitioners and the majority of the patients will be treated by them. Hence, our process was pragmatic and reflected reality. As well, these family physicians have recently completed a family medicine training program in which psychiatric diagnosis and management were emphasized.

Many research studies following the 1992-1995 conflict have considered posttraumatic stress disorder in the population of Bosnia and Herzegovina, but few studies have considered overall mental health in the general population. This study provides important baseline information for the family medicine specialists in the country, as well as policy makers, public health and mental health specialists, so that the extent of mental and social disorders in the country can begin to be adequately addressed.

Regarding the study population, this was the first study conducted by the newly-formed Primary Care Research Network, comprised of physicians living and working throughout both entities of Bosnia and Herzegovina: the Federation of Bosnia and Herzegovina and the Republika Srpska. Thus, the study population included people from all three ethnic populations. Along with the representative age range in the sample, this study population is indeed representative of the general adult population of Bosnia and Herzegovina.

With over one-quarter of all adults attending primary care centers in Bosnia and Herzegovina presenting with at least one type of mental or social disorder, health policies that address these needs must be developed. The care of mental disorders continues to be focused at the institutional level, with little attention paid to community services and care. The education of primary care doctors and nurses has not been adequate in both its content and its practicality to enable new Family Medicine teams to provide mental health care with confidence. Community support services and networks, while available to a limited extent in some municipalities, must also be strengthened and made accessible to all citizens.

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