

## **Annotated Bibliography: Diabetes and Hypertension**

[Geltman, P. L., Dookeran, N. M., Battaglia, T., & Cochran, J. \(2010\). Chronic disease and its risk factors among refugees and asylees in Massachusetts, 2001-2005. \*Prev Chronic Dis\*, 7\(3\), A51.](#)

The purpose of the study was to examine the prevalence of risk factors for and diagnoses of chronic diseases among refugees and asylees resettled in Massachusetts. The authors performed a retrospective cross-sectional study using Refugee Health Assessment Program (RHAP) data from health screenings of newly arriving refugees and asylees. The study also determined prevalence of obesity/overweight, hypertension, diabetes, anemia, and history of coronary artery disease (CAD).

Europe/Central Asia and Africa were the top two regions of origin representing 4,289 adults who completed health screening from January 1, 2001 through December 31, 2005. Results showed that almost one-fifth of the sample was obese and more than one-fourth was overweight. The largest portion of these individuals was from Europe and Central Asia. Almost one-fourth had hypertension diagnoses with documentation highest among people from Europe and Central Asia. Refugees and asylees from East and Southeast Asia had the lowest prevalence of obesity/overweight and the lowest prevalence of hypertension. They were also more likely than other to have CAD. A total of 157 diagnoses of CAD, 153 were among refugees rather than asylees and 80% of these had been documented in reports from overseas medical examinations. Among the total of 131 diabetes diagnoses, 71 were among refugees and 49% of these were documented in reports of overseas medical examinations.

The regional origin of refugees and asylees was strongly associated with prevalence of risk factors for chronic diseases except diabetes. Although rates of CAD and diabetes are low in the sample, the study found a high prevalence of risk factors for chronic disease such as obesity/overweight and hypertension. Populations resettling in the United States should be screened for chronic disease risk factors and be linked to more resources to address their long-term health care needs and to receive culturally appropriate counseling and education for risk reduction.

[Health of resettled Iraqi refugees --- San Diego County, California, October 2007-September 2009. \(2010\). \*MMWR Morb Mortal Wkly Rep\*, 59\(49\), 1614-1618.](#)

The study reviewed refugee health screening data of Iraqi refugees resettling in San Diego County, California, USA in Fiscal Year 2008 and 2009. Among 4,923 screened refugees aged >1 year, 692 (14.1%) had latent tuberculosis infection (LTBI), and 751 (24.5%) were classified as obese. Among 2,704 adult refugees, 410 (15.2%) were hypertensive. Of refugees aged ≥40 years that were screened for hyperlipidemia, 89.9% had dyslipidemia. Few had evidence of pathogenic intestinal parasites on stool examination.

The editorial note accompanying the article compares the findings with that of the general population in California and provides screening considerations based on key highlights from the aforementioned assessments. The prevalence of obesity of Iraqi refugees in California nearly equals that of California residents (24.6% and 24.8% respectively). The editors add that in a different 2009 survey of Iraqi refugees in Jordan and Syria found that 41%-51% of refugees aged  $\geq 18$  years reported a diagnosis of chronic illness such as hypertension, diabetes, or cardiovascular diseases. LTBI in Iraqi refugees aged  $\geq 65$  years was comparable to rates in other refugee populations.

The editors emphasize the importance of evaluation for obesity, hypertension, and dyslipidemia during medical assessment and screening for diabetes and heart disease among those with risk factors. Testing for LTBI should be encouraged and treatment offered to those with positive test results. The editors also recommend that the Centers for Disease Control and Prevention (CDC) and state public health departments should collaborate in improving data collection for newly arriving refugees regarding infectious and chronic diseases.

[Kinzie, J. D., Riley, C., McFarland, B., Hayes, M., Boehnlein, J., Leung, P., et al. \(2008\). High prevalence rates of diabetes and hypertension among refugee psychiatric patients. \*J Nerv Ment Dis\*, 196\(2\), 108-112.](#)

The study entailed a chart review aimed to understand prevalence rates of diabetes and hypertension among refugee psychiatric patients at the Intercultural Psychiatric Program (IPP) at the Oregon Health and Science University, focusing on Vietnamese, Cambodian, Somali, and Bosnian refugee psychiatric patients. Each patient suffered multiple traumas and was in active treatment in IPP between 2004 and 2006. The study assessed variations in prevalence of diabetes and hypertension based on obesity (as determined by body mass index (BMI)), age, and marital status.

Variables including ethnic group, gender, age, marital status, years in the United States, and psychiatric diagnosis, made using Diagnostic Statistical Manual-IV (DSM-IV) criteria. Additionally, medical diagnoses, medications and smoking and alcohol history were noted. Of the 459 participants, 64.2% had a PTSD diagnosis usually associated with major depression; 16.8% had major depression alone; and 11.4% had some type of psychosis.

Cambodians experienced the highest rate of trauma followed by Somali, Bosnian, and lastly the Vietnamese refugees. Forty-two percent had hypertension, varying from 51% of Cambodians to 32% of Somalis. Additionally, 15.5% of the group has diabetes, varying from 24% among Somalis to 13% among Vietnamese. Prevalence of hypertension in the participants was higher than current reported rates in countries from which refugees originated.

Prevalence of hypertension correlated to level of trauma but the findings are not statistically significant. Age and BMI were the only statistically significant factors associated with hypertension ( $p < 0.000$ ) while other factors, such as marital status, trauma, gender, and ethnic group did not reach statistical

significance. Diabetes was associated with trauma ( $p < 0.008$ ), marital status ( $p < 0.018$ ), and age ( $p < 0.04$ ), but when controlling for BMI, only BMI remained statistically associated with diabetes.

The study showed that refugee psychiatric patients had high prevalence of hypertension and diabetes compared to the U.S. population. Psychiatric patients may have increased risk factors for cardiovascular diseases in general. Additionally, chronic diseases are rapidly increasing in developing countries and therefore, refugees arrive in the U.S. with an existing risk that may be exacerbated by trauma. Therefore, the authors concluded that refugees with psychiatric diagnoses should be particularly screened for chronic diseases.

[Wieland, M. L., Morrison, T. B., Cha, S. S., Rahman, A. S., & Chaudhry, R. \(2011\). Diabetes Care Among Somali Immigrants and Refugees. \*J Community Health\*.](#)

The study explores the quality of diabetes care among 81 Somali patients with diabetes, older than 18 years, with an assigned primary care provider in the Primary Care Internal Medicine and Family Medicine clinics at Mayo Clinic Rochester in Midwest United States. These patient records were abstracted from April 1, 2008 to June 30, 2008. The quality of diabetes care was compared to patients that were not identified as Somali in the electronic medical records.

The criteria used for compliance with diabetes quality indicator was hemoglobin A1C  $<7\%$ , LDL cholesterol  $<100\text{mg/dl}$ , blood pressure  $<130/80$  mm Hg, adapted from the American Diabetes Association guidelines that were current during the study interval. The completion of diabetes related tests was retrieved from all-source data systems at the clinic to assess the rate of adherence with diabetes quality metrics for both Somali and non-Somali patients. Health-seeking behaviors (i.e. number of primary care visits, and emergency department visits) were also extracted from patients' medical records.

Results showed that Somali patients with diabetes were less likely to meet the optimal glycemic control than non-Somali patients. Rates of lipid control among non-Somali patients were not statistically different than controls' as was the case with achievement of optimal blood pressure. There was no difference in achievement of optimal blood pressure. The number of primary care visits during the study interval was associated with achievement of all three diabetes care quality goals. There was no association between emergency department visits and achievement of the quality goals.

The study demonstrated disparities in achievement of diabetes management quality goals among Somali patients as compared to non-Somali patients. In discussion of their findings, the authors suggested that low health literacy may be a factor that leads to this disparity because of linguistic and cultural barriers in patient-provider relationships. The positive association between primary care visits and achievement of diabetes goals suggests that programs should promote patient-provider relationships and health-care literacy in diabetes care.

[Yanni, E. A., Naoum, M., Odeh, N., Han, P., Coleman, M., & Burke, H. \(2012\). The Health Profile and Chronic Diseases Comorbidities of US-Bound Iraqi Refugees Screened by the International Organization for Migration in Jordan: 2007-2009. \*J Immigr Minor Health\*.](#)

The objective of this study was to describe the health profile of United States-bound Iraqi refugees screened by International Organization for Migration (IOM) in Jordan during June 2007- September 2009. The authors reviewed and analyzed data for 18,990 Iraqi refugees from June 2007 to September 2009. Infectious diseases such as TB, syphilis, HIV, and leprosy were identified. A text search in exam results and physician notes were used to classify chronic noninfectious conditions such as hypertension, diabetes mellitus (DM), and obesity. Risk factors such as smoking and obesity were also identified.

Results showed that of 14,077 US-bound Iraqi refugees  $\geq 15$  years, one was diagnosed with active TB, 251 had latent TB infection (LTBI), 14 were diagnosed with syphilis and were receiving treatment, and 5,095 (26.8%) had at least one chronic condition. Of 13,299,  $\geq 15$  years with available blood pressure information, 33% had hypertension ( $\geq 140/\geq 90$ ), including 25% having stage-I and 8% having stage-II hypertension. An additional 42% of Iraqi refugees were prehypertensive ( $\geq 120-139/\geq 80-89$ ). Of 267 children 3-14 years of age with measurement of blood pressure, 12 had hypertension.

Of the 18,990 refugees screened, 2.7% (n=514) were diagnosed with DM, of which 11% had type I and 89% had type II. Of those diagnosed with DM, 84% had hypertension and 22% had pre-hypertension. In total, 35% of screened Iraqi refugees with available information had at least one of three chronic conditions: hypertension, DM, or obesity.

Overall, the study showed that this particular group of Iraqi refugees had low prevalence of infectious diseases and high rates of chronic conditions. The study's findings illustrated the dramatic trend in some recent refugee populations away from acute infectious diseases toward chronic health conditions such as hypertension and diabetes. In addition patients with pre-hypertension may likely develop hypertension than those with lower blood pressure later in resettlement. The authors concluded that large numbers of Iraqis resettling in the US may be at risk for developing cardiovascular diseases.