

***Studying Cardiovascular Disease Among Somali Refugees and Immigrants: Lessons Learned  
Through Community Engagement and Respondent Driven Sampling of Social Networks***

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Since the civil war in Somali in the 1990s, Somali refugees have been coming to the U.S. Many have settled in Minnesota, with a population estimated at 20,000 – 70,000 currently. ***Not enough is known about the health of Somali refugees and immigrants since coming to the United States.***

Our study is a collaboration between the HealthPartners Institute for Education and Research, Hennepin Healthcare, Wellshare International, Aurora Healthcare, and the East Africa Health Project. ***We are asking the question: Have Somali people living in the U.S. environment experienced the “healthy immigrant effect”?*** Is the population’s profile of health and disease beginning to look like the rest of the country?

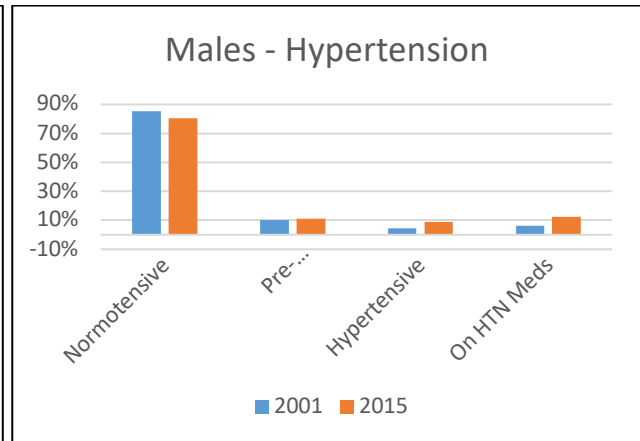
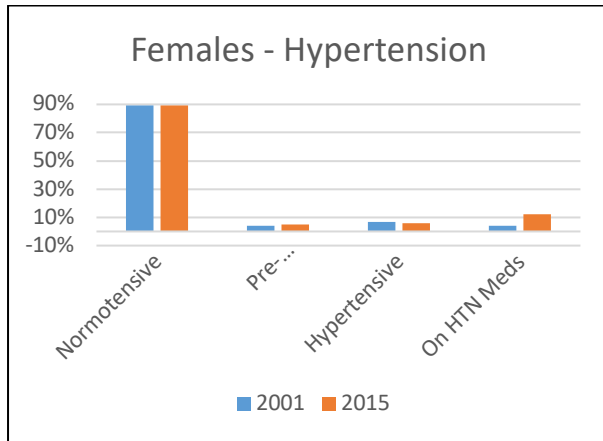
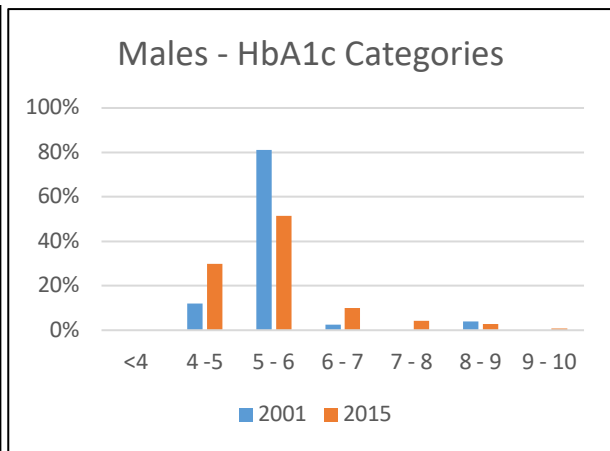
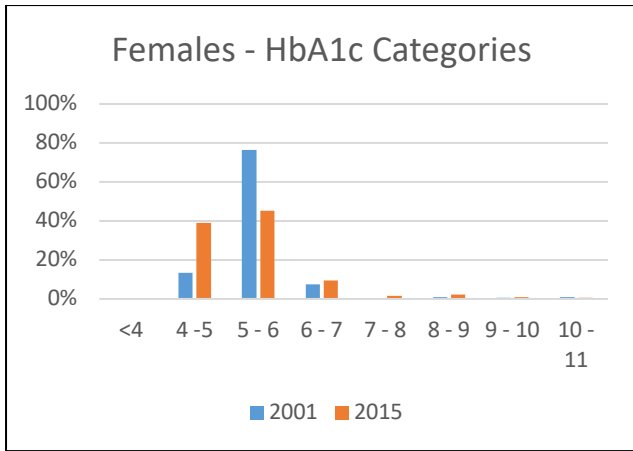
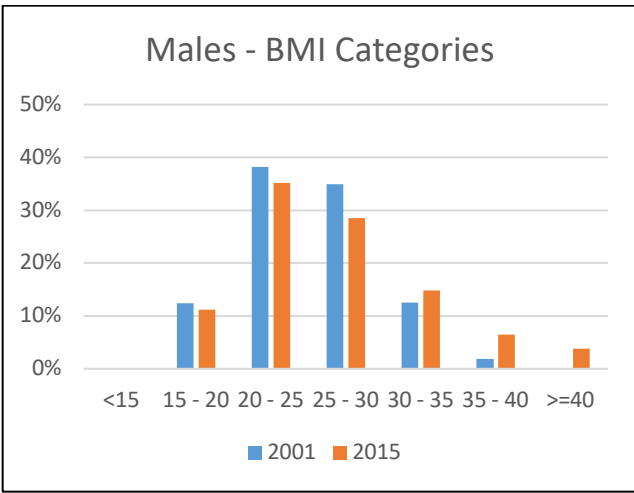
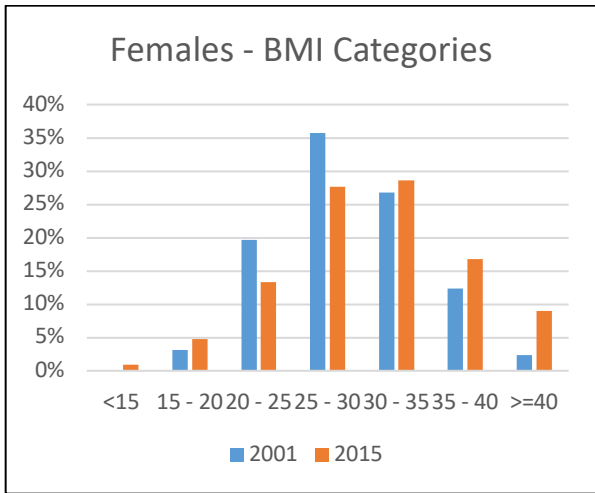
***In 2015, we surveyed a respondent-driven sample of 1156 Somali individuals.*** This follows a study by some of the collaborators in ***2001 that surveyed 253 individuals using cluster randomized sampling of households.*** ***Respondent-driven sampling is a chain-referral technique for surveying hard-to-reach populations*** in which participants recruit 3 to 5 respondents in a series of 5 to 8 “waves” that continues until it approximates a random sample.

Using participatory methodologies, the study integrated several activities to promote health as a shared value. We established ***a community advisory board that utilized the strengths and expertise of numerous cross-sector partners*** including clinical, community, religious, and media leaders. ***The design of our survey and blood sampling procedures were modified to suit community concerns*** and inputs from the community advisory board. The survey team was ***adaptable in their interviewing and recruitment to the circumstances of individual participants.*** Each participant also had the opportunity to receive ***personalized medical results and discussion with a physician who spoke Somali.*** Through ongoing public awareness efforts, our study team has tried to generate ***awareness in the Somali community about cardiovascular disease risks and the behaviors and conditions necessary for optimal health.***

To improve the comparability of our results, we ***weighted both 2001 and 2015 samples to the age and sex distribution of the combined 2011-2013 American Community Survey (ACS),*** yielding similar age and sex distributions between the two studies

We found that ***obesity substantially increased for Somali women,*** and ***diabetes substantially increased for both men and women.*** Waist circumference remained high and minimally changed for both men and women, as did smoking rates among Somali men. ***Cholesterol levels and risk dramatically decreased for Somali men and women.*** Hypertension increased minimally for both men and women but remains lower than the U.S. average. ***Overall CVD risk for both men and women is increasing, but is currently less than the U.S. average.***

Through the use of ***social network analysis and analytical modeling,*** the study will hopefully contribute to ongoing interventions that lead to ***healthier, more equitable communities.***



	2001	2015
<b>Total Cholesterol:HDL Ratio</b>		
<b>Males &gt;5.0 ↑ CAD Risk</b>	31%	4%
<b>Females &gt;4.5 ↑ CAD Risk</b>	21%	8%
<b>History of Smoking</b>		
<b>Males</b>	20%	19%
<b>Females</b>	1%	2%
<b>10 Yr CVD Risk &gt; 7.5%</b>		
<b>Males</b>	13%	15%
<b>Females</b>	9%	12%