

1-20-2016

# Characterization of Hypertension Risk Factors at the Committee on Temporary Shelter

Lindsey M. Eastman

J. Curtis Gwilliam

Ethan R. Harlow

Adrienne R. Jarvis

Jacob Korzun

*See next page for additional authors*

Follow this and additional works at: [https://scholarworks.uvm.edu/comphp\\_gallery](https://scholarworks.uvm.edu/comphp_gallery)

 Part of the [Community Health and Preventive Medicine Commons](#), and the [Health Services Research Commons](#)

---

## Recommended Citation

Eastman, Lindsey M.; Gwilliam, J. Curtis; Harlow, Ethan R.; Jarvis, Adrienne R.; Korzun, Jacob; Ohkura, Michael K.; Siskind, Samantha M.; Spencer, Brianna L.; Coleman, Tim; and Hood, Virginia L., "Characterization of Hypertension Risk Factors at the Committee on Temporary Shelter" (2016). *Public Health Projects, 2008-present*. 226.

[https://scholarworks.uvm.edu/comphp\\_gallery/226](https://scholarworks.uvm.edu/comphp_gallery/226)

This Book is brought to you for free and open access by the Public Health Projects, University of Vermont College of Medicine at ScholarWorks @ UVM. It has been accepted for inclusion in Public Health Projects, 2008-present by an authorized administrator of ScholarWorks @ UVM. For more information, please contact [donna.omalley@uvm.edu](mailto:donna.omalley@uvm.edu).

---

**Authors**

Lindsey M. Eastman, J. Curtis Gwilliam, Ethan R. Harlow, Adrienne R. Jarvis, Jacob Korzun, Michael K. Ohkura, Samantha M. Siskind, Brianna L. Spencer, Tim Coleman, and Virginia L. Hood



# Characterization of Hypertension Risk Factors at the Committee on Temporary Shelter

LM Eastman<sup>1</sup>, JC Gwilliam<sup>1</sup>, ER Harlow<sup>1</sup>, AR Jarvis<sup>1</sup>, J Korzun<sup>1</sup>, MK Ohkura<sup>1</sup>, SM Siskind<sup>1</sup>, BL Spencer<sup>1</sup>, T Coleman<sup>2</sup>, VL Hood, MBBS, MPH<sup>1</sup>

1. University of Vermont College of Medicine, 2. Committee on Temporary Shelter

## Introduction

The health of homeless populations is at risk due to a high prevalence of undiagnosed hypertension (HTN) and cardiovascular disease (CVD).[1-3] The interaction of housing and socioeconomic status with the risk factors for HTN and CVD remains unclear.[3-5] Prevention of HTN through a healthy diet, exercise, adequate sleep, and avoidance of tobacco has been well described, but financial limitations and competing priorities for shelter and food make blood pressure (BP) control difficult for this population.[6-8] By characterizing the risk factors and awareness of hypertension within the homeless population at the Committee on Temporary Shelter Daystation (COTS) in Burlington, Vermont, we may be able to identify promising avenues for therapeutic intervention.

## Methods

- Study was conducted at a COTS Daystation drop-in shelter in Burlington, Vermont
- All English-speaking clients of the Daystation shelter were eligible for the study
- A 35-question survey was administered in a face-to-face, structured interview consisting of multiple choice and short answer questions
- Questions were designed to assess self-rated perceptions of health, knowledge of BP, risk factors for HTN, and barriers to BP control
- Frequency counts were performed using Excel to analyze multiple choice data and short answer responses were coded using content analysis [9]
- Remaining data analysis for this study was generated using SAS software [10]

## Acknowledgements

Thanks to COTS clients and staff, especially Mr. Tim Coleman for facilitating the project and supporting our data collection efforts.

## References

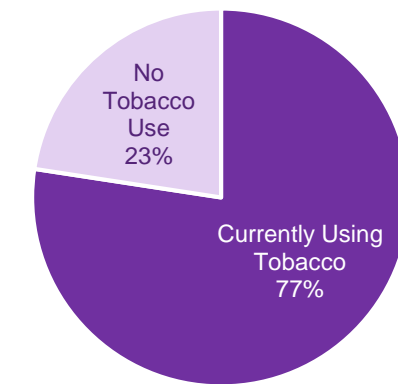
1. Fazel S, Geddes JR, Kushel M. The health of homeless people in high-income countries: descriptive epidemiology, health consequences, and clinical and policy recommendations. *Lancet*. 2014;384(9953):1529-40.
2. Lee TC, Hanlon JG, Ben-David J, et al. Risk factors for cardiovascular disease in homeless adults. *Circulation*. 2005;111(20):2629-35.
3. Szerlip MI, Szerlip HM. Identification of cardiovascular risk factors in homeless adults. *Am J Med Sci*. 2002;324(5):243-6.
4. Hwang SW, Orav EJ, O'Connell JJ, et al. Causes of death in homeless adults in Boston. *Ann Intern Med*. 1997;126(8):625-8.
5. Kim DH, Daskalakis C, Plumb JD, et al. Modifiable cardiovascular risk factors among individuals in low socioeconomic communities and homeless shelters. *Fam Community Health*. 2008;31(4):269-80.
6. Baggett TP, Tobey ML, Rigotti NA. Tobacco use among homeless people--addressing the neglected addiction. *N Engl J Med*. 2013;369(3):201-4.
7. Baggett TP, Chang Y, Singer DE, et al. Tobacco-, alcohol-, and drug-attributable deaths and their contribution to mortality disparities in a cohort of homeless adults in Boston. *Am J Public Health*. 2015;105(6):1189-97.
8. Gangwisch JE, Heymsfield SB, Boden-Albala B, et al. Short sleep duration as a risk factor for hypertension: analyses of the first National Health and Nutrition Examination Survey. *Hypertension*. 2006;47(5):833-39.
9. Microsoft Excel Redmond, WA: Microsoft Corporation; 2013.
10. SAS 9.3 for Windows. Cary, NC: SAS Institute Inc; 2011.
11. Vermont Department of Health. Vermont Behavioral Risk Factor Surveillance System: 2014 Data Summary. Montpelier, VT: Vermont Department of Health; 2014.
12. Jones CA, Perera A, Chow M, et al. Cardiovascular disease risk among the poor and homeless - what we know so far. *Curr Cardiol Rev*. 2009;5(1):69-77.
13. King BA, Dube SR, Tynan MA. Current tobacco use among adults in the United States: findings from the National Adult Tobacco Survey. *Am J Public Health*. 2012;102(11):e93-e100.

## Results

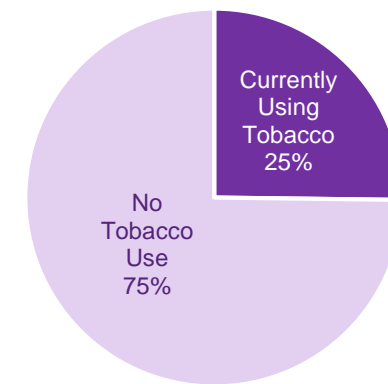
### Fast Facts about COTS Clients

- 50% reported having high BP
- 31.3% were concerned about their BP in the last 6 months
- 43.8% slept <5 hours on average most nights in the last month
- 75% use tobacco
- 90.6% exercise (including walking) >2 hours per week
- 59.4% highest level of education was some college or higher
- 91% have medical insurance vs 92% of VT and 83% of US [11]

### COTS Current Tobacco Use



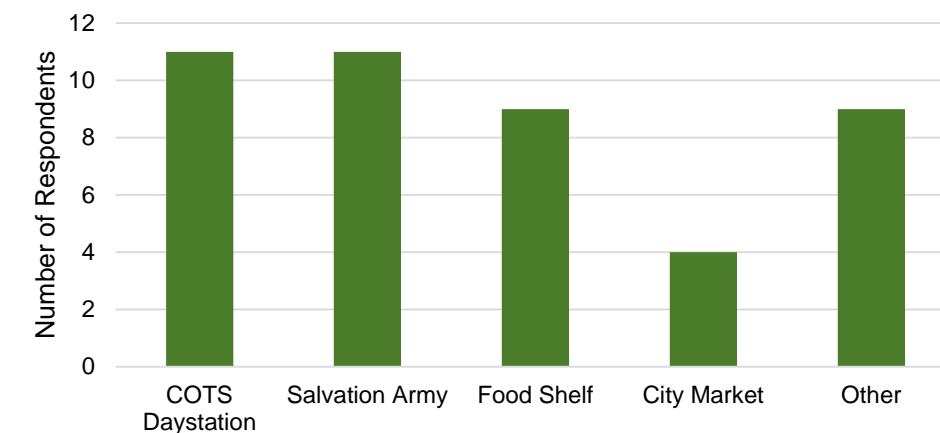
### US Current Tobacco Use



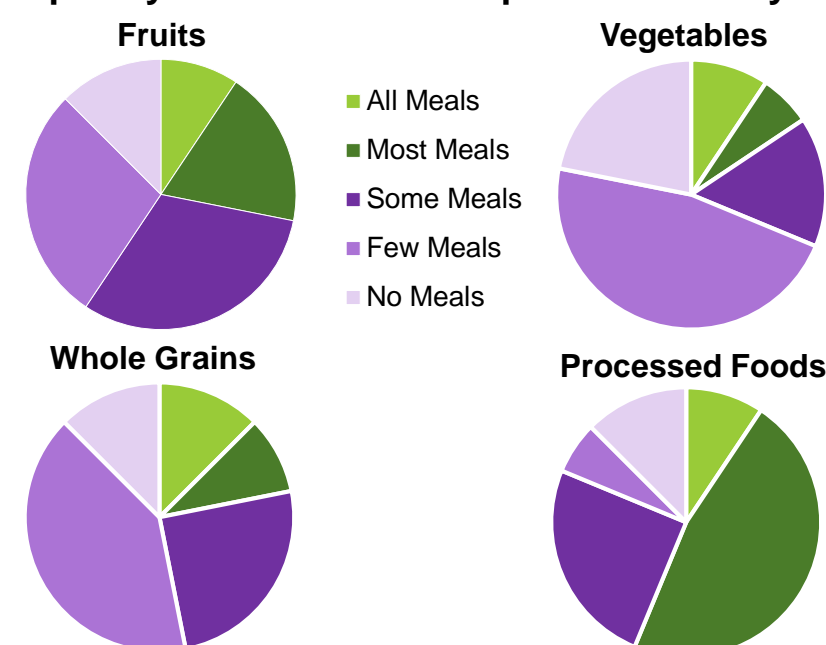
### Barriers to Controlling Blood Pressure

Barriers to Controlling Blood Pressure	Respondents
Too many things to worry about	14%
No place to store medications	11%
Don't know how to decide if BP is well controlled	11%
Don't know which diet to follow	10%

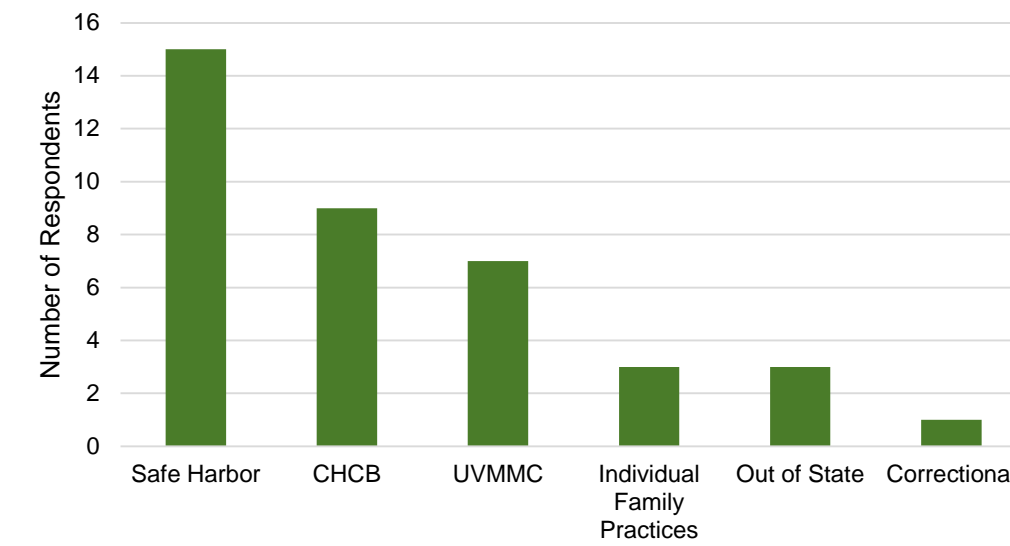
### Sources of Food



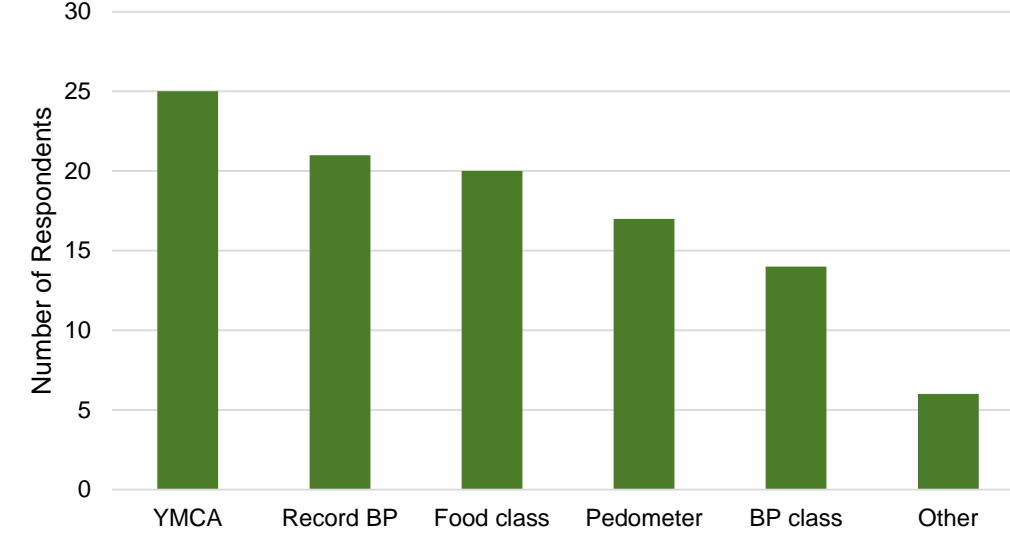
### Frequency of DASH Diet Components in Daily Meals



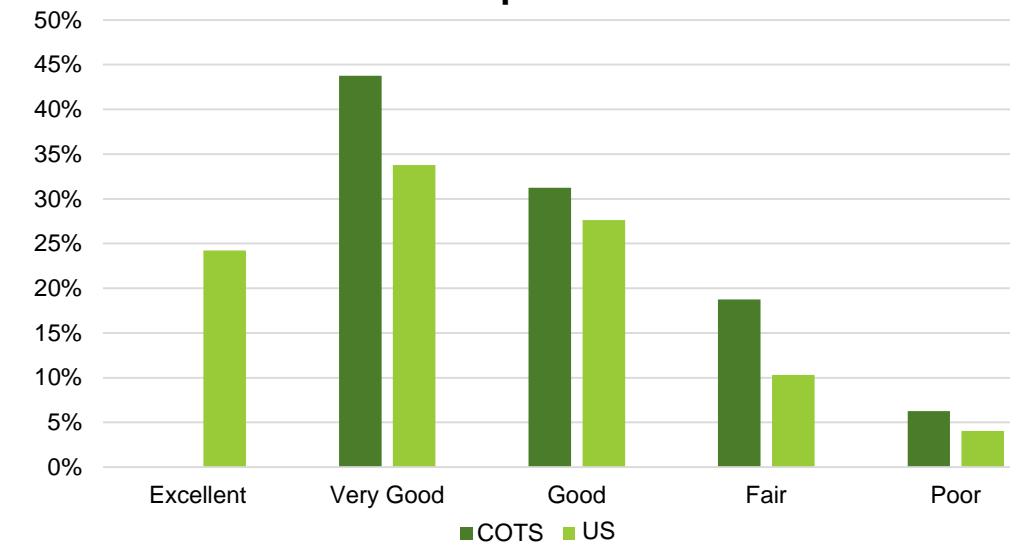
### Sources of Healthcare



### Interest in BP Control Methods



### Self-Reported Health



COTS client has blood pressure taken by UVM College of Medicine student

## Discussion

- Clients report COTS and Salvation Army as most popular sources of food
- The majority of COTS clients used Safe Harbor Health Center as the main source of health care
- Correlation ( $R=0.39$ ,  $p<0.05$ ) between BP concern and desire to exercise may show lack of time for and/or low knowledge about effective exercises
- A majority of respondents reported positive relationships with health care providers, contrasting other studies [12]
- Clients reported many barriers to BP control with the top two including "not having a place to store meds" and "not knowing how to change their diet"
- Prevalence of tobacco use in this population was found to be over three times the national average [13]
- To control BP, clients would be interested in YMCA's gym facilities, heart-healthy cooking classes, and BP monitoring techniques

### Limitations:

- Study composed of small sample size ( $n=32$ ) from single polling site
- Convenience sampling (location/time) may not represent the Burlington, Vermont, homeless population
- Selection bias as all participants volunteered to complete the survey

## Conclusion

- In this homeless population, the greatest perceived barriers to BP management are competing priorities, lack of secure medication storage, and information on heart-healthy diets
- This COTS population may represent a less vulnerable sub-population of Burlington's homeless population and one that is especially responsive to resources and opportunities
- COTS excels at advocating for their clients and providing important services to which they may not otherwise have access
- COTS successfully facilitates client enrollment in health insurance and access to health care
- COTS and the Salvation Army could work toward providing more fruits, vegetables, and low sodium options for clients
- COTS can assist the reduction of a major HTN risk in this population by facilitating access to smoking cessation programs
- COTS can further serve clients by providing secure medication storage, BP measurement tools, and encouragement of YMCA gym pass use