The Dietary Quality of Persons with Heart Failure in NHANES 1999-2006

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OBJECTIVE

- To describe the dietary quality and achievement of recommended dietary goals and assess correlates of goal achievement in a national sample of persons with heart failure

RATIONALE

- Heart failure is associated with considerable morbidity and mortality U.S.
- American College of Cardiology/American Heart Association (ACC/AHA) guidelines recommend the following dietary guidelines for persons with non-end-stage heart failure
  - Restricted sodium intake
  - Adherence to dietary guidelines for underlying and comorbid conditions, including coronary heart disease, hypertension, hypercholesterolemia and diabetes
- However, there is little understanding of the current dietary quality of persons with heart failure

METHODS

Data Source

- NHANES is a series of cross-sectional studies conducted by the CDC to provide health information representative of the civilian population
- Uses multistage, stratified sampling design to ensure adequate population representation
- Data from 1999-2000, 2001-2002, 2003-2004, 2005-2006 cycles were used

Target Population

- Adults 50 years and over
- Self-reported ever being diagnosed with heart failure by a health care provider
- Included 524 persons (6.5% of persons age 50+)

Dietary Assessments

- Single 24 hour recall administered at mobile exam center
- Used Food Intake Analysis System (FIAS)
- Goals defined using:
  - ACC/AHA heart failure guidelines
  - AHA dietary guidelines for CVD
  - Dietary guidelines for Americans

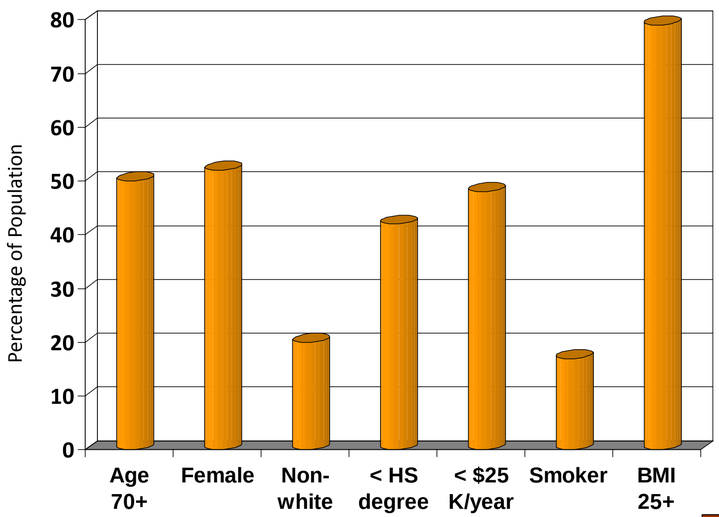
Covariates

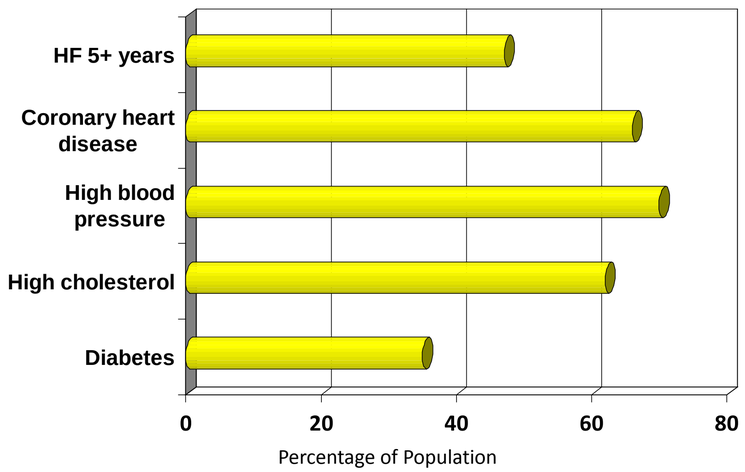
- Demographic factors: Age, gender, race/ethnicity, education income level
- Risk factors: Body mass index (BMI), smoking status
- Medical conditions: Provider diagnosis of coronary heart disease, hypertension, hypercholesterolemia and diabetes, years since HF diagnosis

Statistical Analysis

- Weighted to general U.S. population age 50+ with heart failure
- Descriptive statistics of population and dietary components
- Principal component analysis using orthomax rotation to describe patterns of dietary goal adherence
- Multivariate Poisson regression model to determine association of covariates with number of dietary goals achieved

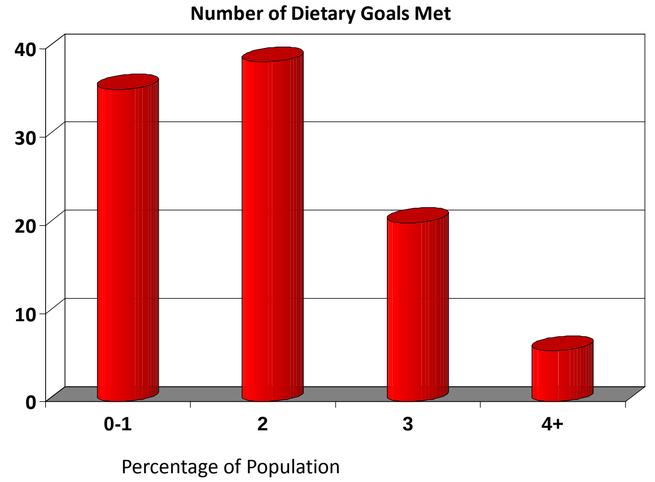
POPULATION CHARACTERISTICS





DIETARY GOALS

Dietary Component	Daily Goal	Mean (SE)	Met Goal	Factor 1	Factor 2
Sodium	< 2000 mg	2,716 (94)	34%	.63	-
Saturated fat	< 7% total energy	11 (.3)	13%	.65	-
Fiber	>= 30 gm	14 (.4)	4%	-	.79
Cholesterol	< 200 mg	262 (12)	53%	.65	-
Protein	0.8 gm/kg ideal body weight	1.1 (.03)	68%	-.77	-
Calcium	>= 1200 mg	706 (21)	13%	-	.42
Magnesium	>= 420 mg men >= 320 mg women	270 (9) 200 (7)	10%	-	.84



MULTIVARIATE POISSON MODEL PREDICTING NUMBER OF GOALS MET

	IRR (95% CI)
Education	
< HS degree	Referent
HS degree	1.19 (1.05-1.35)
> HS degree	1.16 (1.02-1.32)
BMI (per unit)	.990 (.982-.997)
Current smoker	
No	Referent
Yes	.90 (.79-1.00)

IMPLICATIONS AND LIMITATIONS

- Study limitations include self-reported heart failure diagnosis and diet and cross-sectional design
- Dietary quality of persons with heart failure is poor, with persons of lower education, overweight and obese persons and smokers at greatest risk
- Poor diet places persons with heart failure at risk for greater symptoms, poorer quality of life, worsening comorbidities and greater mortality rates
- Behavioral scientists and clinicians are challenged to develop appropriate dietary interventions targeted for this population