Pilot Project Determining Risk Factors for Coronary Artery Disease in Bangladeshi Immigrant Men 35 Years & Older Living in Houston, TX

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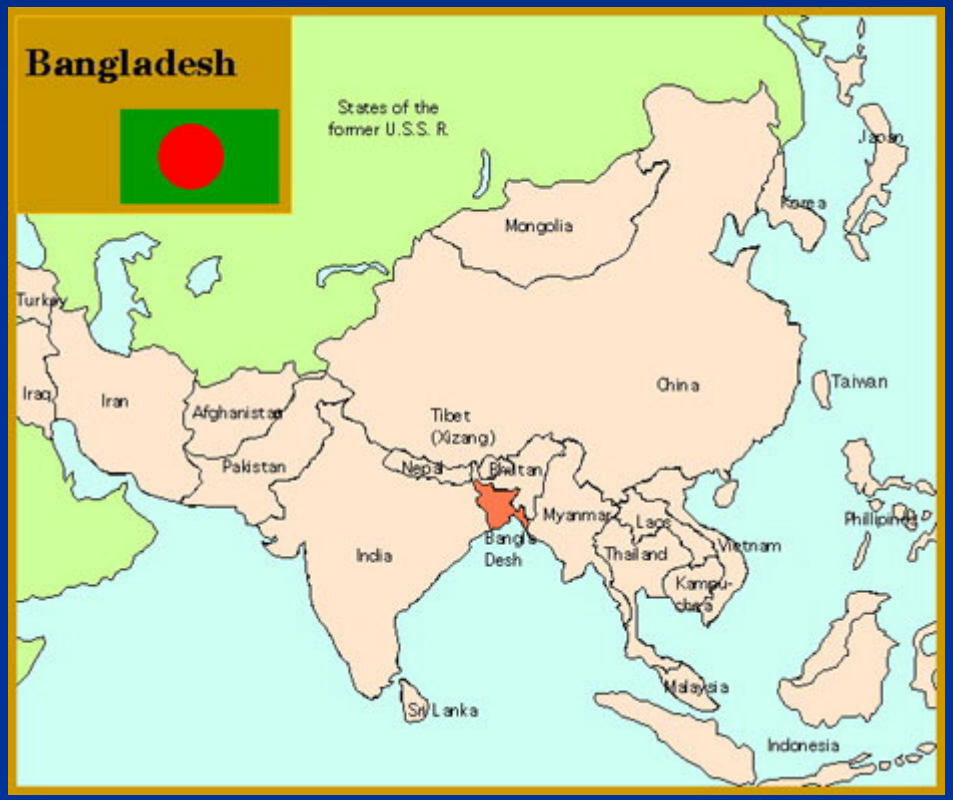
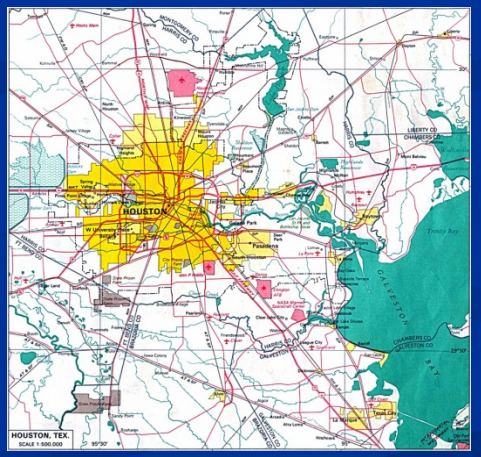
Burden of Coronary Artery Disease (CAD)

http://www.news.vcu.edu/getimg.aspx?imgid=549

Bangladeshi Immigrants





Houston

Source: www.kaladarshan.arts.ohio-state.edu, www.media.maps.com

CAD in Bangladeshi Immigrants in UK & Canada

- CAD related deaths Canada:
  SE Asian males vs Canadians - 42% vs 29%
- CAD incidence in England:
  1.5 times higher among SE Asians than Europeans
- Earlier Onset of MI in England:
  Bangladeshi immigrants vs Europeans – 50 vs 56 years

How are they different

- People bring their own beliefs and culture with them as they immigrate to a new country.
- Diet and exercise patterns are a big part of culture
- Barriers for prevention in the immigrants in England: Hospitality with serving food, body image, lower socio-economic status, stress and access to health care

Established CAD Risk Factors

- Age >45
- HTN
- Abnormal lipid profile (total cholesterol, triglyceride, HDL and LDL)
- DM
- Inappropriate diet
- Inappropriate physical activity
- Smoking
- High BMI/obesity
- Fam Hx of MI

Cultural Factors

- About 60% of the variance in heart disease related mortality between states were due to differences in risk factors attributed to difference in
  - cultural norms
  - lack of economic opportunity
  - poverty
  - social isolation

Rationale

Above scenario may not be different from many other ethnicities, but this needs to be verified for each group

Study Objectives

- To examine the risk factors for CAD (total cholesterol, triglyceride, LDL & HDL, blood pressure, fasting blood glucose, and exercise level) in Bangladeshi immigrant men 35 years and older in Houston, TX

- To examine demographic and cultural factors as potential contributors to CAD risk factors

Methodology

- Study design: Cross sectional
- Time period: January-February, 2007
- Sampling: Convenience sampling (size – 91)
- Recruitment:
  - Bangladeshi immigrant community in Houston
  - Flyers distributed in the community events
  - Posters in local stores, E-mails, Telephone calls & Words of mouth

In the Field/In Action

Methodology:

Inclusion Criteria –

- Bangladeshi immigrant men ≥35 years of age living in Houston, TX

Data collection –

- Face-to-face interview
- Measurements: Blood pressure, Fasting serum glucose, Lipid profile, Height & Weight

Information Gathered

- Collected information:
  - Demographics
  - Family history of CAD
  - Pertinent Personal Medical history
  - Smoking
  - Exercise
  - Diet habit
  - Perception of their health status
- Blood pressure
- Fasting glucose
- Lipid profile

Data analysis

Used STATA version 9

- Descriptive statistics
- Bivariate analysis
- Multivariate analysis

Results

Demographics of 91 Participants

Variable Name	Sub Group	Percent
Age	≥ 45 years of age	52
Education	≥ 16 years	54
Income	>35 K per year	51
Type of work	Odd Job	35
	Professional	50
	Business owner	15

Demographics of 91 Participants

Variable Name	Sub Group	Percent
Marital status	Married	94
Smoking	Past smoker	59
	Current smoker	23
Exercise	>=3 times/wk	36
Family Hx of MI	Yes	41

Medical History of 91 Participants

Variable Name	Percent	% On Medication	Total N with Disease
Personal history of CAD	4	100	4
Personal history of DM	23	90	21
Personal history of HTN	28	64	25
Personal history of Hypercholesterolemia	42	55	38

Dietary Factors

Variable Name	Percent
High Fatty Meal (Biriyani) ≥ 2 weekends/month	76
Fish Intake	75
Fruits	12

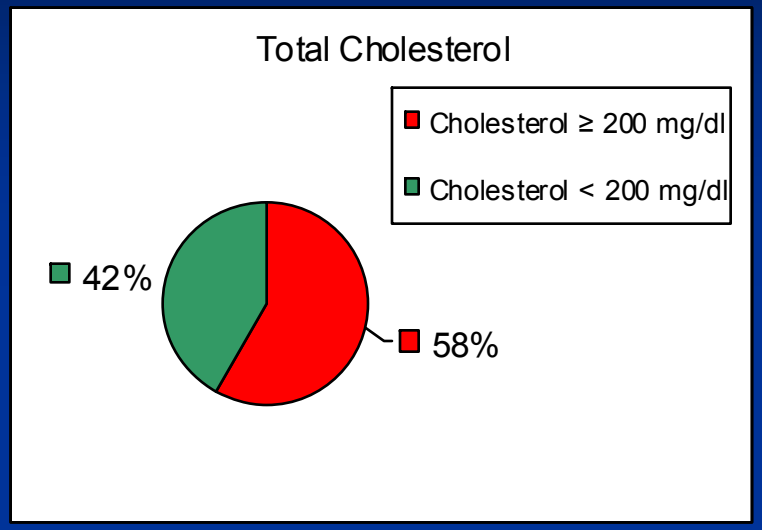
N = 91

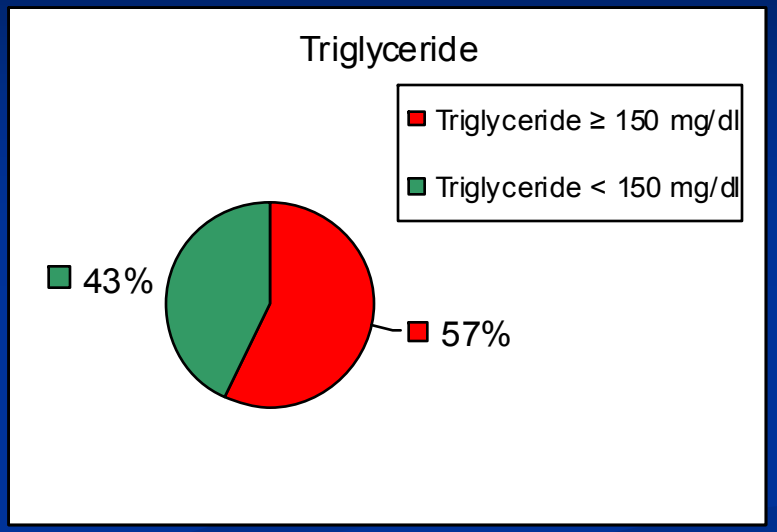
Participants' Perceptions of Health

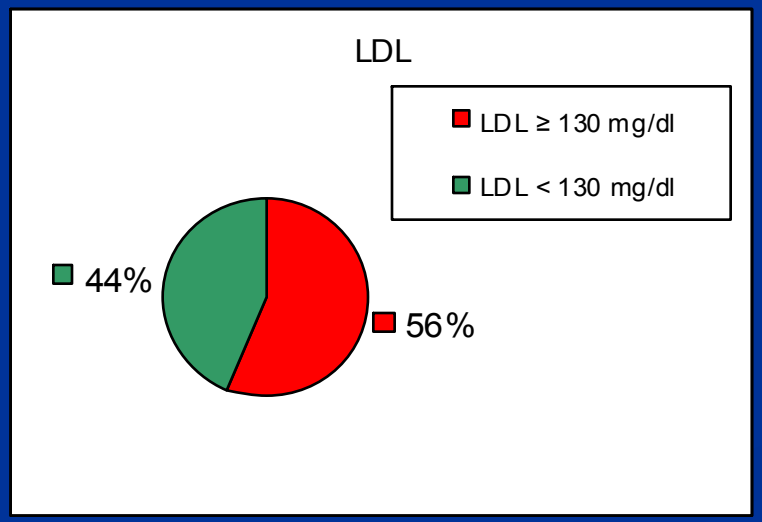
Self Reported Health Risk	Percent
Perception of being at risk of developing CAD - YES	32
How do you rate your overall health - GOOD	75

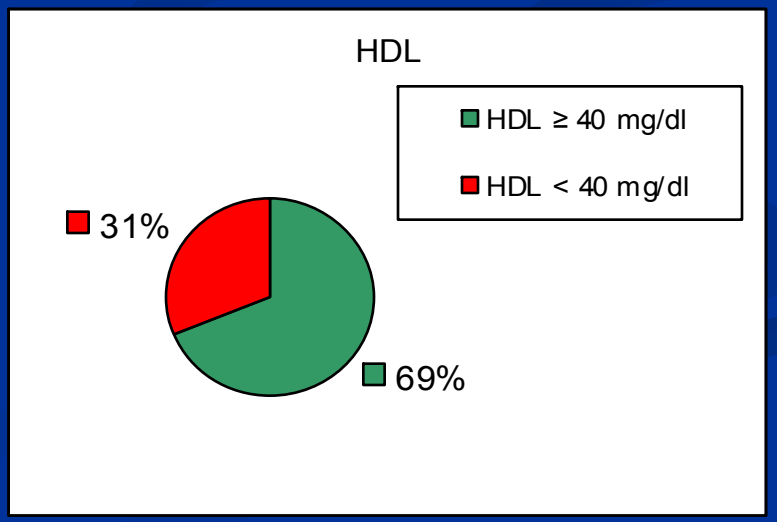
N=91

Lipid Profile of 91 Participants

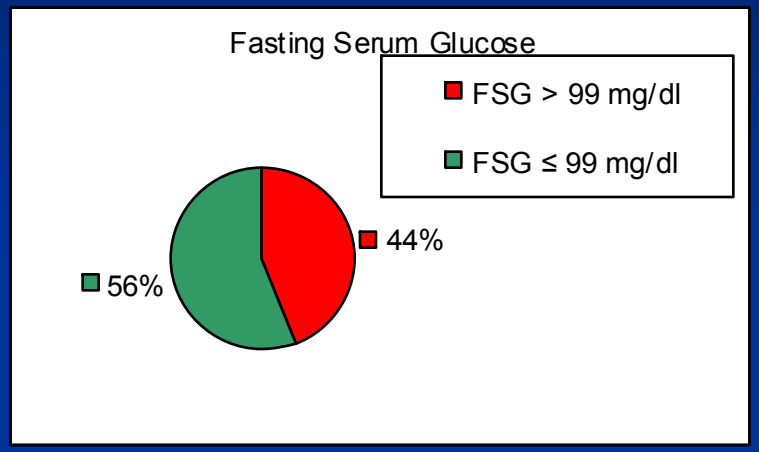


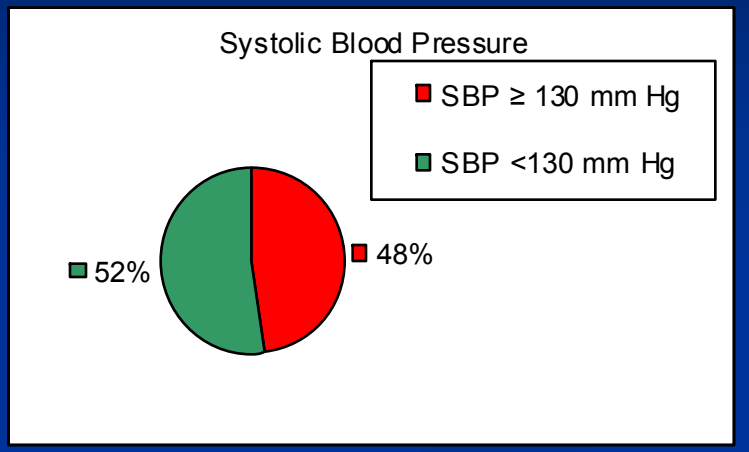


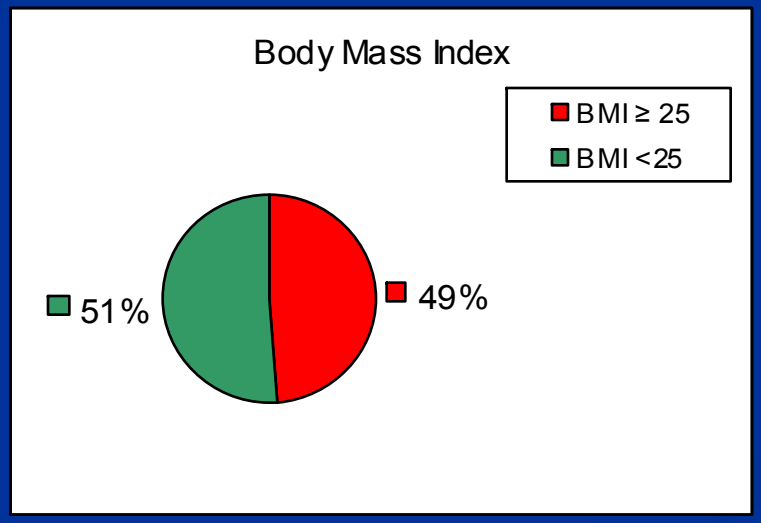


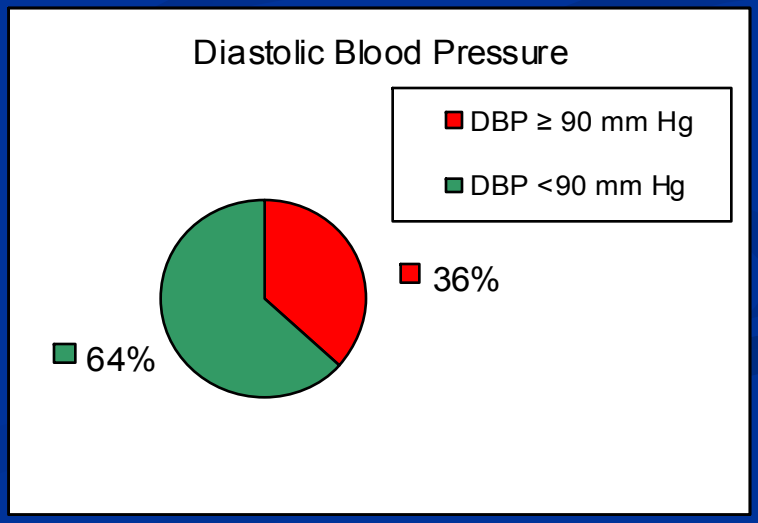


FSG, BP & BMI for 91 Participants









Association of Fish consumption with HDL Level

Fish Consumption	HDL ≥ 40 mg/dl %	HDL <40 mg/dl %	Total % (N)
≥ 3 times/wk	61.8	38.2	100.0 (68)
< 3 times/wk	91.3	8.7	100.0 (23)

Chi2 7.0 & p value <0.01, N=91

Associations Between Self-Rated Health Status and CAD Risk Factors

	HDL <40 mg/dl %	Systolic BP ≥130 mm Hg %	Exercise <3 times/wk %
Good Health Status	57	66	65
Poor Health Status	43	34	35
Chi^2	6.6	4.0	7.2
p value	0.01	0.05	<0.01

Demographic and Cultural Factor Contributing to Perception of Being at Risk for CAD

Independent Variable ↓	Perception of being at risk for developing CAD (OR & 95% CI)
Family History of CAD	5.28 (1.72-14.48)
Self-Rated Health Status	0.31 (0.09-0.94)

Comparison with Previous Research

- Current smoking:

  Houston vs England vs Canada
  23% vs 34% vs 17%

- Percent of family history of MI:

  Houston vs England vs Canada
  41% vs 14% vs 38%

- Exercise ≥ 3 times per week:

  Houston vs England
  36% vs 9%

  - Yet more than 50% in Houston – no or very minimal exercise (less than 3 times a week)

Comparison with Previous Research

- Medical Hx of CAD: Houston vs England
  4% vs 29%
- Medical Hx of DM: Houston vs England
  23% vs 50%
- Medical Hx of HTN: Houston vs England
  28% vs 44%

*US prevalence: For CAD 4%, 2007,
For DM & Impaired fasting glucose18%, 2000 &
For HTN 28%, 2002 (MMWR)

Comparison with Previous Research

- Hypercholesterolemia: Houston vs England
  58% vs 41%
- Hypertriglyceridemia: Houston vs England
  57% vs 44%
- HDL < 40 mg/dl: Houston vs England
  31% vs 39%
- Diabetic range FSG (>126 mg/dl):
  Houston vs England
  18% vs 17%

*US prevalence For Hypercholesterolemia - 25% 2002 (MMWR)

Abnormal Lipid Profile With High HDL

- Higher cholesterol, triglyceride, LDL, Fasting Glucose AND YET more than 2/3rd had high HDL (>=40 mg/dl)
- More older people (81%) (>45 yrs n=47) had a high or normal HDL (>=40 mg/dl) (p=0.01, chi 6.16)

High HDL and Fish Consumption

- About 75% reported fish consumption >=3 days/week
- High level of omega 3 fatty acid were reported in the Bangladeshi immigrants in England
- A fish containing diet was presumed to be contributing to this finding

Summary

- CAD risk factors in Bangladeshi immigrant men in Houston are similar to what were reported in previous research findings from in England and Canada
- Cultural factor may play a role in participant's perception of being at risk for developing CAD

Limitations

- Results are limited for this particular group
- Convenience sampling
- Hip and waist ratio not measured
- Length of stay in the USA not documented

Where Do We Go From Here

- Confirmation of this base line information with further investigation
- Address the risk for metabolic syndrome in this population.
- Educate physicians
- Culturally appropriate health education for this community

Thanks to Bangladesh Community AND

Dr. Carlos Dumas
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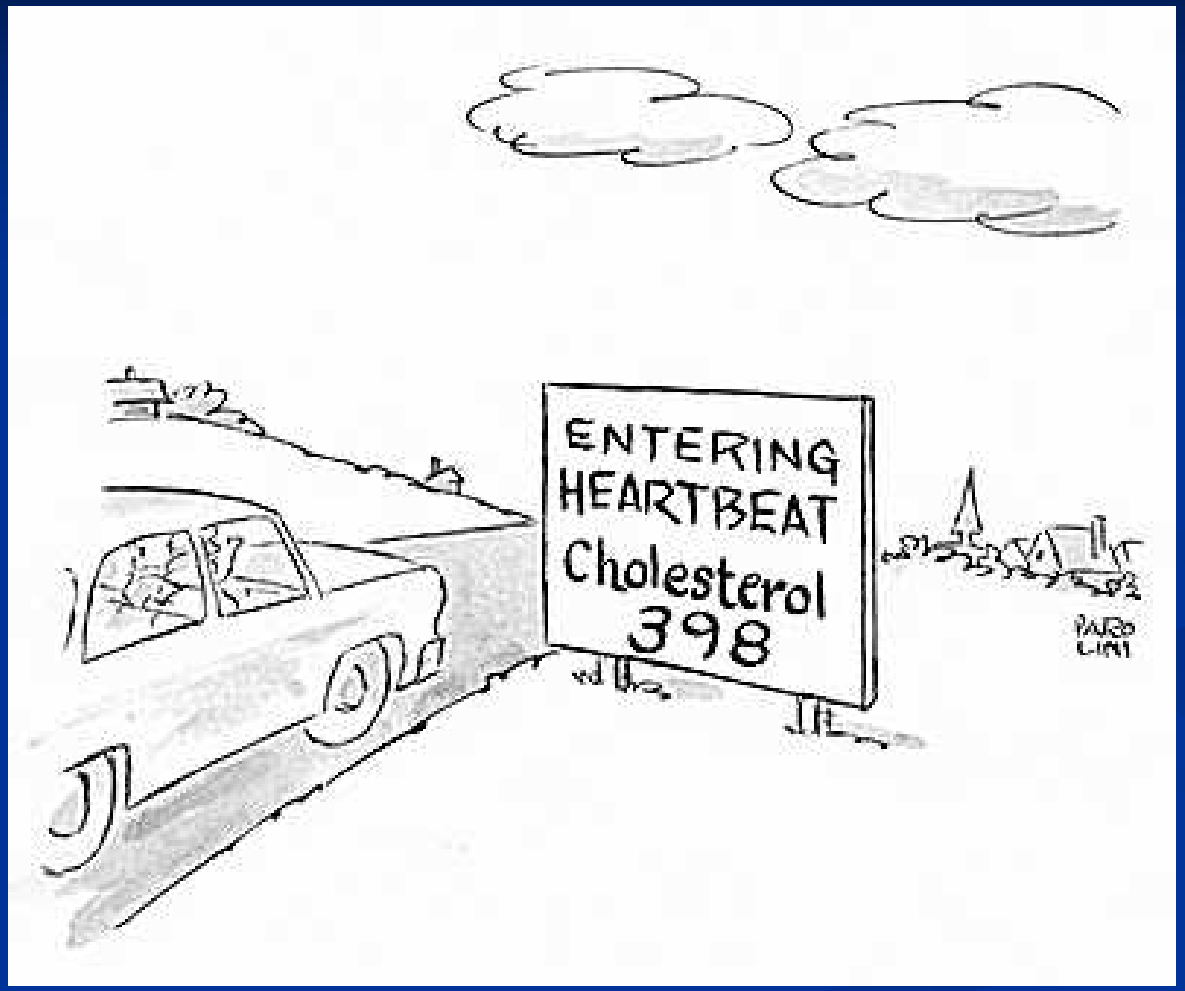

A town called 'Heartbeat'. http://www.cartoonstock.com/directory/h/heart_diseases.asp

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