Role of social conditions, health behavior, and health care access in contributing to the differences in diabetes rates between the Central Bronx and Highbridge/Morrisania areas of New York

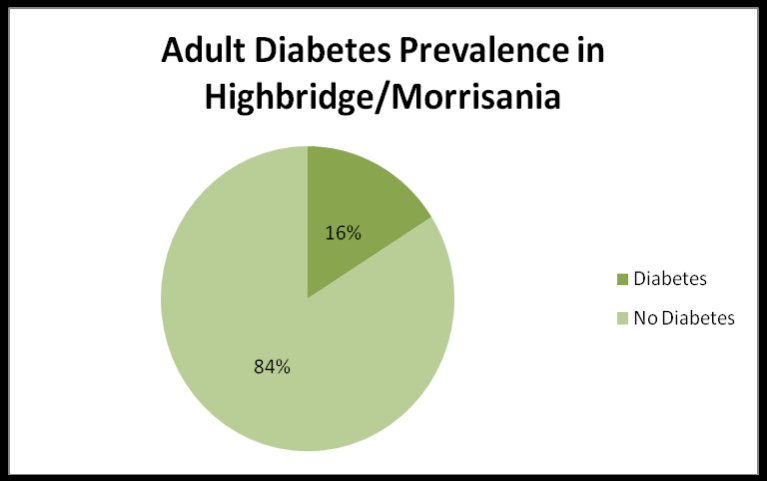
Public Health is an interdisciplinary field aiming to improve the health of a population by focusing more on the prevention of diseases, injuries, and disabilities through a community-action approach. One branch of public health is epidemiology. This branch aims to study a population's rate of illness and it's factors, so that interventions can be made to provide improved medical care and illness prevention.

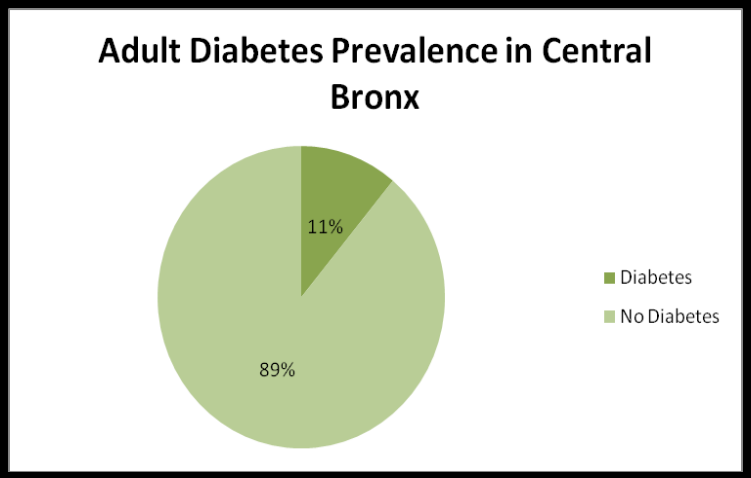
By examining and comparing two socioeconomically similar population in adjoining geographic communities in the Bronx with different diabetes prevalence and outcomes, this study will assess the *role of social conditions, health behavior, and health care access in contributing to the differences in diabetes rates*. This comparison of the communities of the Central Bronx and Highbridge/Morrisania area may yield insights that may lead to health interventions to reduce the prevalence of diabetes and diabetes complications of low income urban communities. Future studies can assess the specific factors that accounts for these differences and more specific interventions can be made for addressing the abnormal levels of diabetes prevalence, complications and outcomes.

ABSTRACT

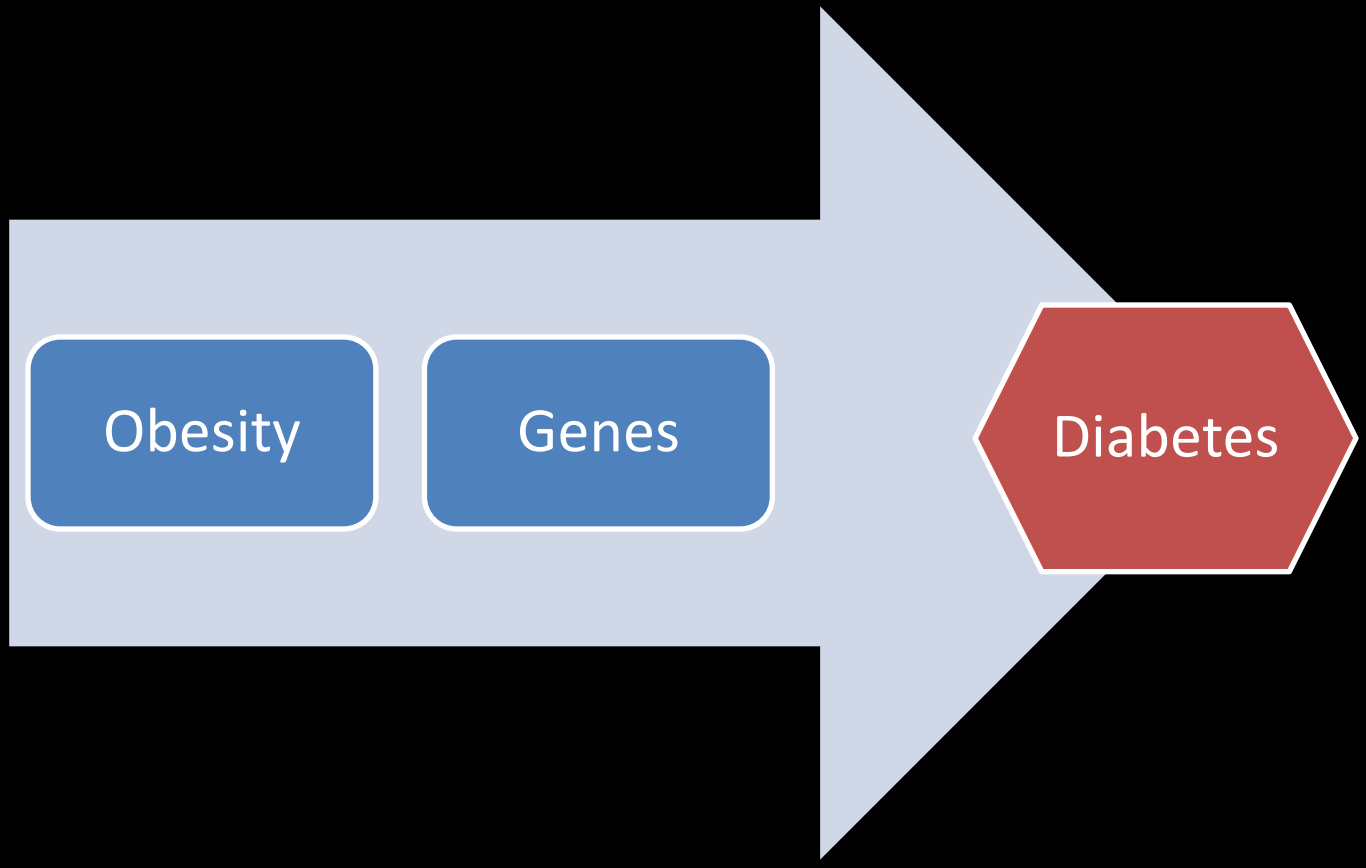
OBJECTIVE: to examine differences in diabetes prevalence, mortality, and health outcomes among populations in two neighborhoods that are racially and socioeconomically similar, in order to understand the role of various social and behavioral factors in diabetes.
DESIGN/METHOD: Demographic, behavioral and social data were analyzed from both New York City Department of Health and Mental Hygiene's 2006 Community Health Profiles and 2006 Community Health Survey on the Central Bronx and the Highbridge/Morrisania area. Park space and crime rate were also examined.

Diabetes Prevalence





General factors that significantly contribute to Diabetes



Data for the two Communities:

Demographics

Indicator	Highbridge/ Morrisana	Central Bronx	Ratio HBM/CB
Demographic			
Population (2000)	189,800	199,500	.95
Percentage residents below poverty line	41%	41%	1.0
(Age 65+)	7%	6%	1.16
Percentage population Hispanic/Latino	57%	62%	.92
Percentage population Black	39%	31%	1.26

Data for the two Communities:

Community Conditions -does the data shed light on possible roles community has on the different rates of diabetes?

Indicator	Highbridge/ Morrisana	Central Bronx	Ratio HBM/CB
Community Conditions			
Natural park space	(Franz Sigel Park and Joyce Kilmer Park)	About three times more space (Crotona Park and Claremont Park)	.33
Serious crime occurance	.97 times national average	1.13 times national average	.85
Supermarkets/Grocer per population	7.85 per 10000	7.91 per 10000	.99
# Deli per population	5.58 per 10000 population	4.47 per 10,000 population	1.24

Data for the two Communities:

Health Behavioral Conditions -does the data shed light on possible roles health behavior has on the different rates of diabetes?

Indicator	Highbridge/ Morrisana	Central Bronx	Ratio HBM/CB
Behavioral			
Adult obesity	27%	28%	.96
On average no exercise per week week	54%	54%	1.00
Percent that didn't consume fruits on previous day.	13-17%	13-17%	1.00

Data for the two Communities:

Health Care Conditions -does the data shed light on possible roles health care has on the different rates of diabetes?

Indicator	Highbridge/ Morrisana	Central Bronx	Ratio HBM/CB
Health Care			
No personal doctor	26%	36%	1.38
Go to ED when sick	20%	16%	1.25
Uninsured in past year	31%	30%	1.03

Data for the two Communities:

Indicator	Highbridge/ Morrisana	Central Bronx	Ratio HBM/CB
Diabetes and other health outcomes			
Percentage rating themselves in fair or poor health	36%	35%	1.02
Average age adjusted death rate from all causes/100,000	1,036	837	1.24
% with diagnosed diabetes	16%	11%	1.45

Hypothesis

HYPOTHESIS: Obesity strongly correlates with diabetes. Therefore, I hypothesize that the increase in delicatessens plays a large role in the difference of diabetes rates. I believe social conditions, instead of demographic conditions, can be more helpful in explaining the difference diabetes prevalence.

Results

Some Noticeable Relationships between diabetes and diabetes indicators:

Demographic:

- Age-The older the population, the more likely the population may have diabetes.
- Race/Ethnicity- The higher the minority (Hispanic and African American) population, the more likely the population may have diabetes.

Community data:

- Little Park Space - the more a community has little park space, the more likely the community may have diabetes.
- Few Supermarkets/Grocers - the lower the prevalence of supermarkets, the higher the diabetes prevalence.
- More Deli prevalence is associated with more diabetes.

Health Access Data:

- No Personal Doctor – a community with lower prevalence of individuals with personal doctors tend to have higher diabetes prevalence.
- Go to ED when sick- a community with higher prevalence of individuals who go to the ED when sick tend to have higher diabetes prevalence..

Interpretation of Results

Studies have supported the the associations that were just mentioned previously.

However, it is unknown as to why the indicators on exercise behavior, eating habits, and and crime rates do not help explain the difference in diabetes prevalence. Perhaps more specific indicators than the ones used can help explain the difference.

It is commonly thought that more available park space would be associated with more exercising habits. However, this association was not found in the study. While it is commonly thought that high crime rates may deter one from utilizing park space for exercise, the crime rates also do not explain the differences in diabetes prevalence. Future studies may explore why this is particularly the case for these two communities.

Out of the indicators that were used to help explain the differences in diabetes prevalence between the communities, the indictors on *deli prevalence* and *health care access* seem to be most helpful. A possible explanation for this is that deli's offer cheap unhealthy food choices and this may tempt individuals to eat those foods more than healthy foods. Health care access explains the differences in diabetes prevalence because having a personal doctor may help one prevent diabetes.

Acknowledgements

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