Chronic Disease and Healthcare

Team DC21002

Meet the Team

Emmet Ryan

Information Science
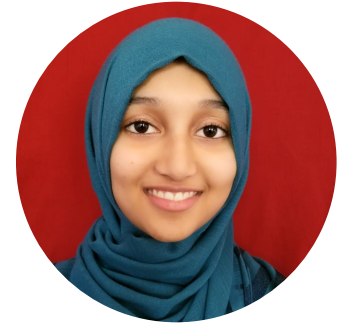Junior

Ryan Pindale

Applied Math & Physics
Senior

Michael Zhang

Information Systems
Sophomore

Ayman Fatima

Computer Engineering
Freshman

HINTS 5 Cycle 4

- We selected the HINTS dataset for our analysis
- It includes over 3,800 responses collected between February and June 2020
- This survey is the fourth cycle of HINTS 5

Interest Areas

- As medical innovation progresses, so does the complex relationship between patient and doctor.

- Today, some people even doubt new practices while many others try to figure out where they stand.

- To investigate the dilemma, we are focusing on chronic disease patients and their relationship with the medical system.

Research Questions

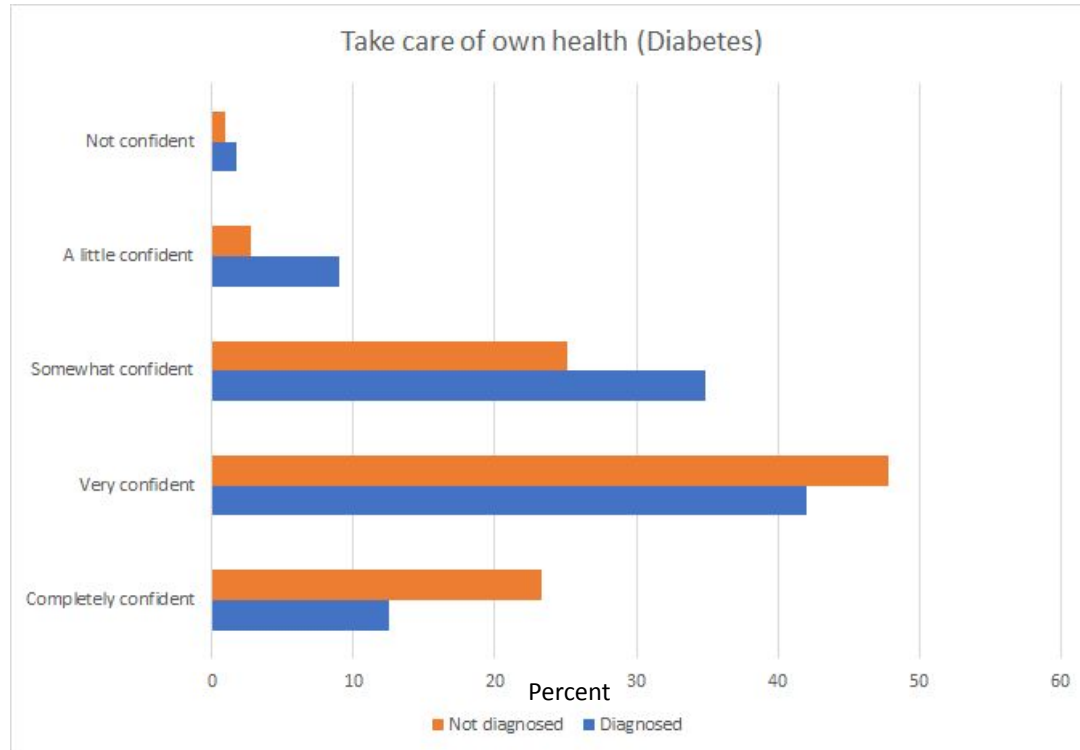**How do people with chronic diseases view their ability to take care of their own health?**

Is there a relationship between chronic disease and cancer?

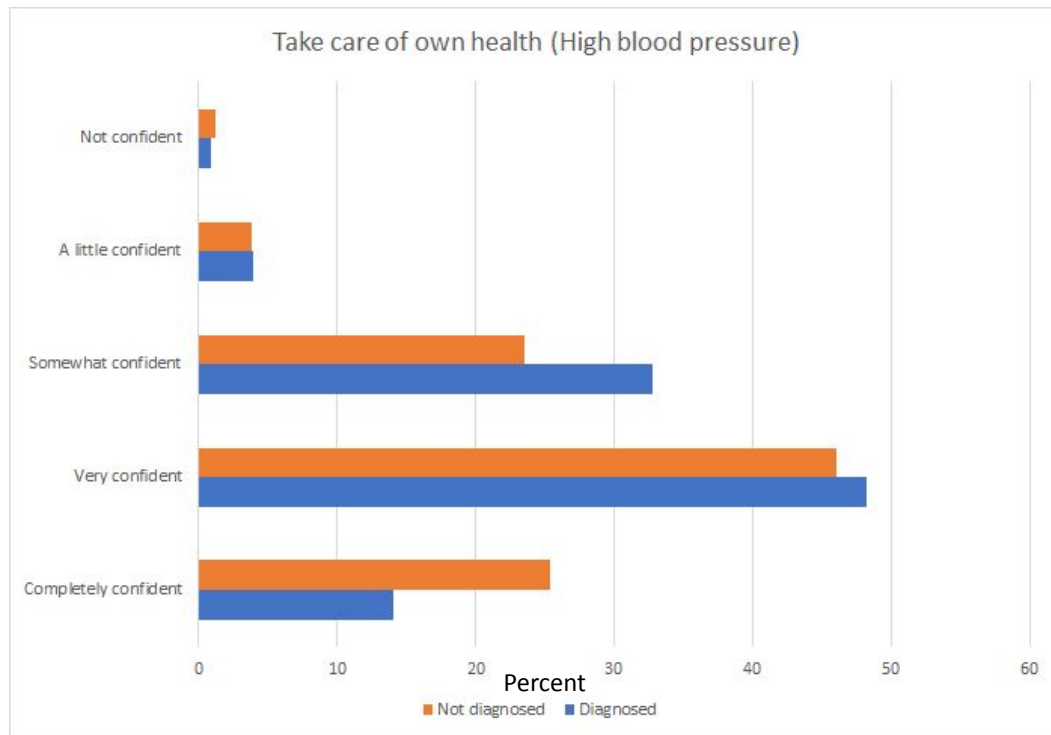**How do we use this information to better the system?**

Taking Care of Their Own Health

- A chi-squared test and Cramer's V demonstrate a correlation between certain chronic diseases and confidence in this area

- We decided to focus on people with either diabetes and/or high blood pressure

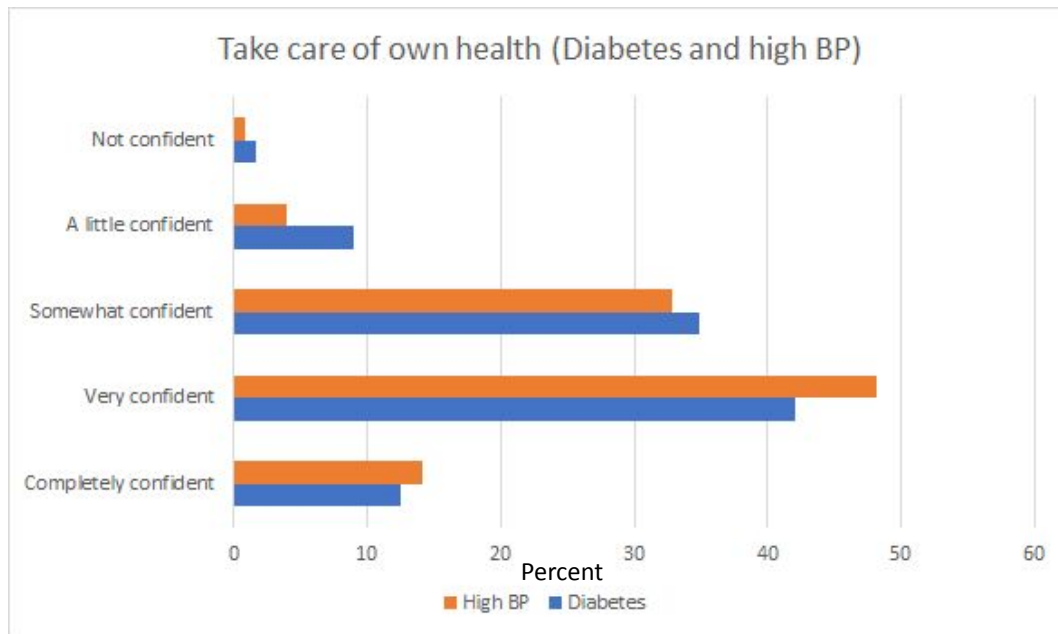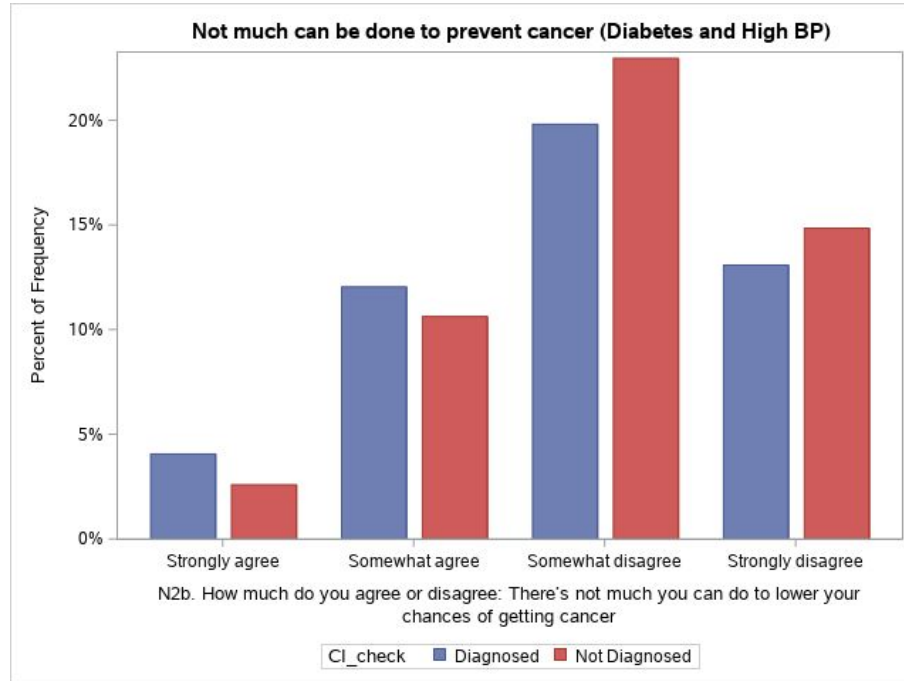- Trends are generally similar, but have some notable differences

Data Analysis

Take care of own health (Diabetes)

Data Analysis

Take care of own health (High blood pressure)

Percent

Not diagnosed   Diagnosed

Data Analysis

Cancer Data Analysis

Not much can be done to prevent cancer (Diabetes and High BP)

N2b. How much do you agree or disagree: There's not much you can do to lower your chances of getting cancer

CI_check — Diagnosed — Not Diagnosed
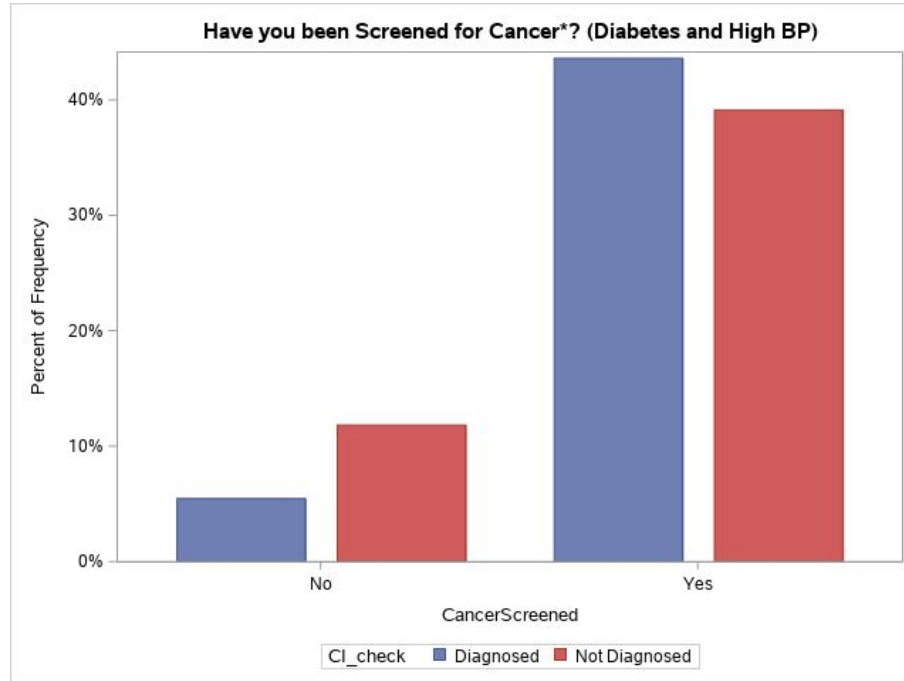
People who have been diagnosed with diabetes or high blood pressure are more pessimistic about cancer prevention.

Cancer Data Analysis

Have you been Screened for Cancer*? (Diabetes and High BP)

People who have been diagnosed with diabetes or high blood pressure are more likely to have reported a screen for cancer.

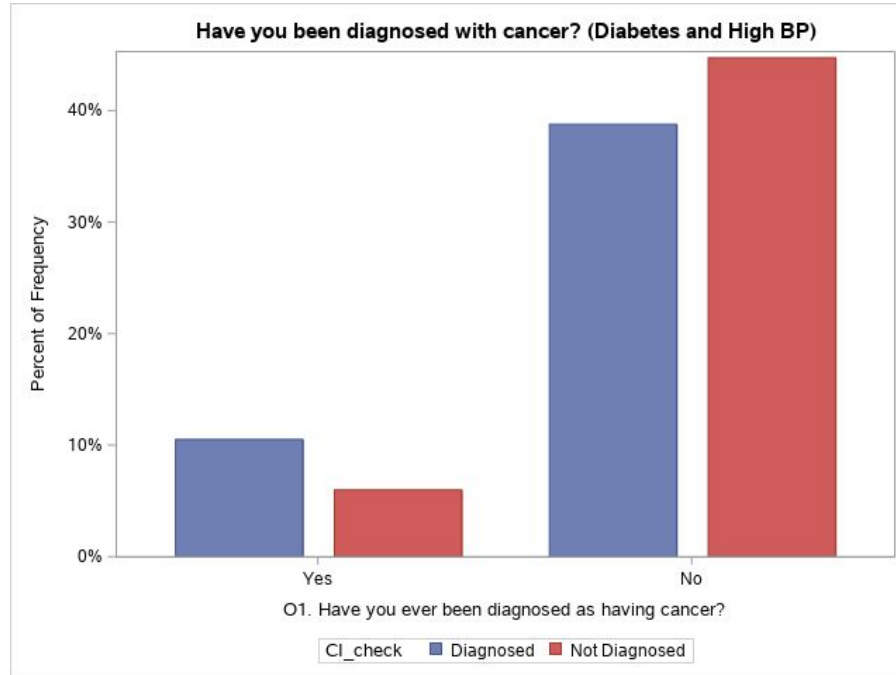*Possible cancer screening options include PAP test, mammogram, and check for colon cancer.

Cancer Data Analysis

People who have been diagnosed with diabetes or high blood pressure are more likely to have reported a past cancer diagnosis.

Policy Change Proposals

- Doctors should continue to encourage their patients with chronic illnesses to get screened for cancer.
- While testing rates are currently high, steps should be taken to keep it that way
- Patients with chronic illnesses should also be encouraged to return for screenings on a regular basis.

Policy Change Proposals Contd.

- The doctor patient relationship can significantly impact how likely a patient is to approach their health providers and receive necessary health information
- A case study done by the American Journal of Medicine outlines the three C's - **caring, communication, and competence** for impactful doctor performance
- New training programs must teach doctors to maintain positive attitudes in front of patients
- Doctors should provide essential tools to their patients for self-sufficiency

Proposal and Conclusion

- Traditionally, there is greater urgency on physical illness over mental illness.
- Solutions should involve more efforts towards psychological health instead of solely the physical disease.
- Consideration should be given to utilizing trained counselors and psychology experts for patients.
- All in all, we must accommodate for patients both physically and mentally.
- If the doctor can act from the perspective of the patient, then the patient can trust the perspective of the doctor.

Appendix

Survey Question - Chronic Illness

H5. Has a doctor or other health professional ever told you that you had any of the following medical conditions:

		Yes	No
a.	Diabetes or high blood sugar?....................	1	2
	MedConditions_Diabetes		
b.	High blood pressure or hypertension?........	1	2
	MedConditions_HighBP		
c.	A heart condition such as heart attack, angina, or congestive heart failure?............	1	2
	MedConditions_HeartCondition		
d.	Chronic lung disease, asthma, emphysema, or chronic bronchitis?............	1	2
	MedConditions_LungDisease		
e.	Depression or anxiety disorder?................	1	2
	MedConditions_Depression		

Survey Question - Ability for Self Care

H2. Overall, how confident are you about your ability to take good care of your health?

OwnAbilityTakeCareHealth

- ☐ 1 Completely confident
- ☐ 2 Very confident
- ☐ 3 Somewhat confident
- ☐ 4 A little confident
- ☐ 5 Not confident at all

Survey Question - Preventing Cancer

N2. How much do you agree or disagree with each of the following statements?

Strongly agree | Somewhat agree | Somewhat disagree | Strongly disagree

a. It seems like everything causes cancer.. □1 □2 □3 □4
   EverythingCauseCancer

b. There's not much you can do to lower your chances of getting cancer... □1 □2 □3 □4
   PreventNotPossible

c. There are so many different recommendations about preventing cancer, it's hard to know which ones to follow........... □1 □2 □3 □4
   TooManyRecommendations

d. If I found out from a genetic test that I was at high risk of cancer, I would change my behaviors such as diet, exercise and getting routine medical tests....... □1 □2 □3 □4
   HighRiskChangeBehavior

Survey Question - Screened for Cancer

M5. There are a few different tests to check for colon cancer. These tests include:

A **colonoscopy** - For this test, a tube is inserted into your rectum and you are given medication that may make you feel sleepy. After the procedure, you need someone to drive you home.

A **sigmoidoscopy** - For this test, you are awake when the tube is inserted into your rectum. After the test you can drive yourself home.

A **stool blood test** - For this test, you collect a stool sample at home, and then provide it to a doctor or lab for testing.

Have you ever had one of these tests to check for colon cancer?

EverTestedColonCa

1 Yes

2 No

Survey Question - Screened for Cancer

O1. Have you ever been diagnosed as having cancer?

EverHadCancer

☐1 Yes

☐2 No → **GO TO O6 on the next page**

O2. What type of cancer did you have?

Mark <u>all that apply</u>.

Supporting Documents - CDC Fact Sheet

- The Centers of Disease Control and Prevention Fact Sheet provided extensive background of mental health and chronic diseases
- The fact sheet also provided resources and studies that related both mental health and chronic diseases
- Link:https://www.cdc.gov/workplacehealthpromotion/tools-resources/pdfs/issue-brief-no-2-mental-health-and-chronic-disease.pdf

Supporting Documents - Clinical Confidence and the Three C's: Caring, Communicating, and Competence

- The American Journal of Medicine is a peer reviewed medical journal
- It serves as the official journal of the Alliance for Academic Internal Medicine
- Link:https://www.amjmed.com/article/S0002-9343(05)00556-5/pdf#:~:text=At%20first%20glance%2C%20it%20should,%2C%20competent%2C%20and%20communicate%20well

Supporting Documents - NIMH

- The National Institute of Mental Health is a branch of the National Institute of Health
- Provided definitions of mental health conditions and provided figures that represented mental health condition prevalence among various demographics
- Link: https://www.nimh.nih.gov/health/statistics/major-depression.shtml