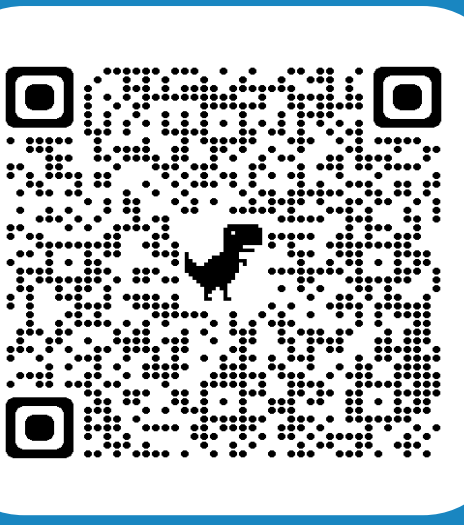


Effects of Social Determinants of Health on Health Outcomes Among Patients with Obesity



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Poster
HPR2

Does Social Context Have A Greater Effect On The General Health Of Obese People?

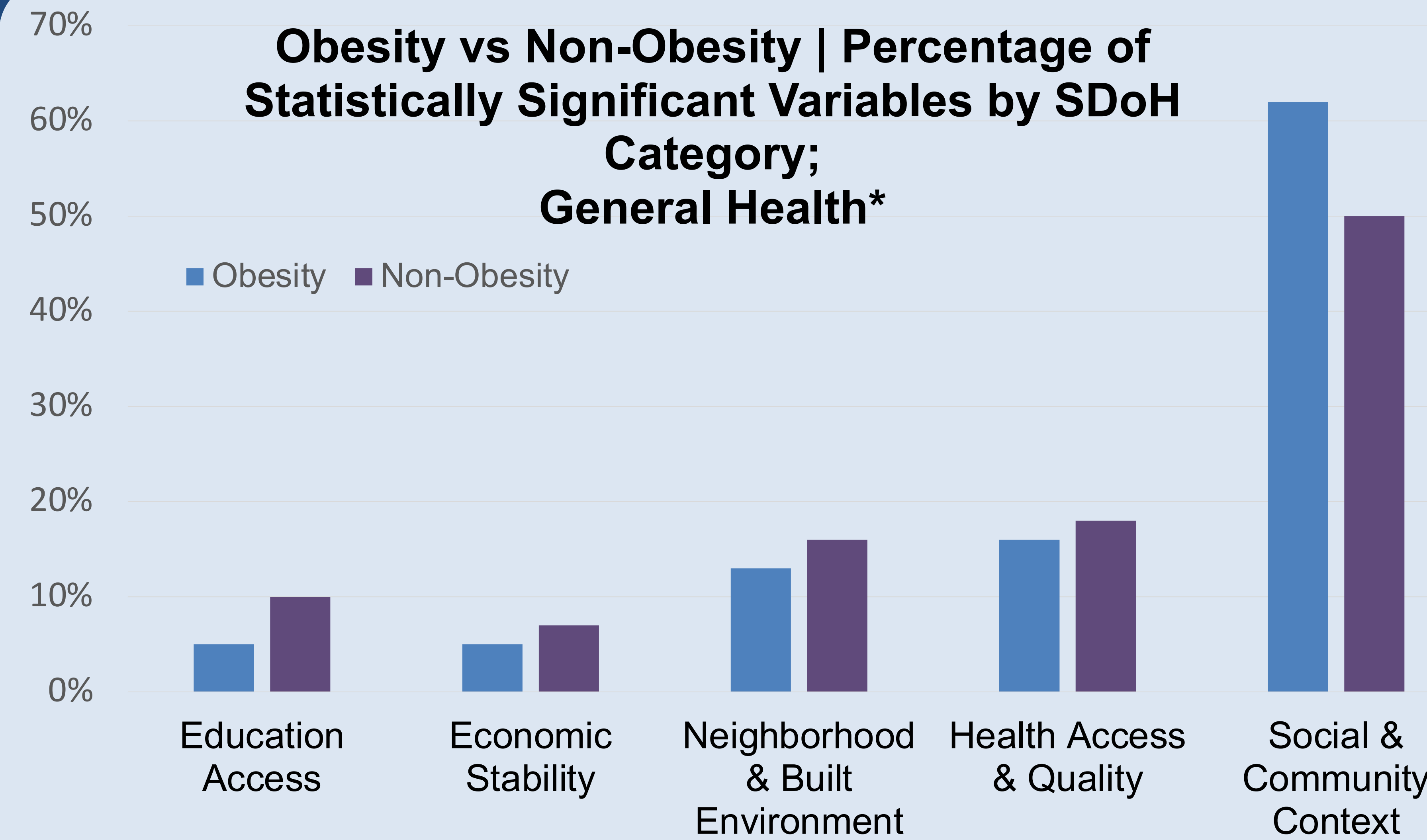
Overview

- **Background:** Social determinants of health (SDoH) are the non-medical attributes of a person's environment that impact their health, functioning, and quality of life [1] addressing differences allows for policies that increase opportunities for health equity.
- **The US National Institutes of Health's All of Us (AoU) database [2]:** Focuses on diversity and inclusion in its participants to give more representative data. At the time of analysis, AoU contained over 372,000 US patients and four types of records: surveys, electronic health records, whole genome sequencing, and Fitbit data.
- **Objectives:** Using the AoU database, the objectives for this project were to 1) infer which categories of SDoH had the greater impact on General Health and 2) infer which survey questions are more correlated with General Quality** and General Health* among the obesity cohort vs. the non-obesity cohort.

Methodology

- **The variables used for this process were comprised of demographic, socioeconomic, survey, and electronic health record data** supplied by the All of Us database.
- Constructed SDoH categories from AoU survey questions, informed by the CDC definitions of SDoH.
- **Objective 1:** Forward stepwise linear regression and principal component analysis was used to examine the impact of SDoH categories on General Health*
- **Objective 2:** Lasso regression was used to identify the individual survey questions or features that are influential to General Quality** and General Health*

Result



- The Social & Community Context category is the greatest source of difference among significant variables that explain differences in general health among Obesity vs. Non-Obesity cohort.
- 64% of Social & Community Context associated variables in the Obesity cohort are statistically significant in explaining General Health* vs 48% for Non-Obesity cohort.

Features with Greatest Predictive Impact on General Health*

Cohort	Features
Obesity	<ul style="list-style-type: none"> • Current Marital Status: Married • In the last month, how often have you felt that you were able to control the important things in your life? • How much do you agree or disagree that your neighborhood looks safe? • How often do you feel isolated from others?
Non-Obesity	<ul style="list-style-type: none"> • How often do you have someone who understands your problems? • How often do you have someone to help you if you were confined to bed

Features with Greatest Predictive Impact on General Quality**

Cohort	Features
Obesity	<ul style="list-style-type: none"> • How often do you feel that you are unhappy from being so withdrawn? • How often do you feel isolated from others?
Non-Obesity	<ul style="list-style-type: none"> • Highest grade: advanced degree • How often do you have someone who understands your problems? • How much do you agree or disagree that people in your neighborhood can be trusted? • How much do you agree or disagree that people around here are willing to help their neighbor? • Health Insurance: Insurance Type Update

- The lasso regression model showed that survey questions relating to supportive relationships were most significant to the obesity cohort, whereas Education and Neighborhood conditions were more significant to the Non-Obesity cohort.

Discussion & Conclusions

Discussion: Social & community factors have a strong bearing on health pertaining to obesity, suggesting that perhaps support networks and attitudes surrounding body image may be the optimal breakthrough point, even more so than healthcare and education initiatives.

Conclusion: Obese patients' General Health* is influenced to a greater degree by Social and Community SDoH variables compared to the non-obese cohort. Economic Stability, Education, and Neighborhood had more significance relative to the Non-Obese cohort, indicating that General Health* for the Non-Obese cohort has higher relations to lifestyle. The obese cohort is even more influenced by social networks.

Next Steps: Continued studies on the aspects of Social & Community Contexts that affect elements of diminished quality of life could be useful in a primary care setting to increase health equity in patients with obesity.

Acronyms Used: Social determinants of health = SDoH, All of Us = AoU, QoL = Quality of Life

*General Health refers to survey question PPI1585711 and General Quality** refers to survey question PPI1585717, both are from the Overall Health Survey of the All of Us Research Program which ask about participant's general health & general QoL.

References
 1. Social Determinants of Health - Healthy People 2030 | health.gov . Available from: <https://health.gov/healthypeople/priority-areas/social-determinants-health>
 2. About the Research Hub - All of Us Research Hub [Internet]. Available from: <https://www.researchallofus.org/about-the-research-hub/>