

Head and Neck Cancer (HNC) disparities among Black Americans in Pittsburgh: Understanding prevailing perceptions and knowledge of HNC.

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Abstract

Introduction: Head and Neck Cancer (HNC) accounts for 4% of all cancer diagnoses in the United States (U.S.), with an estimated 14,500 deaths. While early detection is key to early treatment and cure, disparities in outcomes exist among various populations in the U.S. Black Americans have a higher age-adjusted incidence rate and often present with advanced disease. Additionally, they demonstrate a significantly higher rate of mortality, as early as within 90 days of treatment, even after adjustments for age, stage, primary tumor site, HPV status and treatment type. Similarly, the HNC 5-year survival rate among Black Americans is low among racial groups. Thus, race is an independent risk factor for HNC mortality, with a multidimensional etiology, rather than a mere reflection of socioeconomic differences, as previously presumed. To achieve health equity amongst HNC patients, the underlying reasons for this racial disparity must be elucidated.

One possible contributor to the greater burden of HNC among Black Americans, that has remained largely unexplored, is overall knowledge base and perception of HNC. Our study examines such variables among Black Americans in the city of Pittsburgh, with the goal of educating our participants on HNC using an educational interventional tool - a short video that provides education on risk factors, signs and symptoms and screening recommendations. We hypothesized that there would be a low level of knowledge of HNC among our study population, possibly compounded by patients' sense of invincibility, mistrust of healthcare system and a low priority for preventive health measures. We further predicted that although our intervention would increase knowledge of HNC, it would not lead to significant change in risk behavior modification, thus shedding light on the need for multiple intervention points needed to reduce this disparity.

Objectives: To assess the health awareness, perception of risk and susceptibility related to HNC among Black Americans in Pittsburgh. We also aim to increase our study population's knowledge of HNC using our educational tool and assess the impact of this exposure on their knowledge of the disease.

Methods: In our cross-sectional survey of Black American adults in the city of Pittsburgh. All participants received a pre-intervention survey. Participants then received the intervention and then an immediate post-intervention survey. Group 2, after a period of one month, received a follow-up survey that assessed knowledge-seeking behaviors in the interim, followed by the same intervention and post-intervention survey that group 1 received.

Results and Conclusion: Our investigative survey revealed evidence of low levels of risk perception, knowledge of HNC symptoms and health resources for HNC among Black Americans in Pittsburgh, a population at-risk for poor HNC outcomes. Our results demonstrate tangible intervention points that can be utilized by the community of Head and Neck Surgeons in Pittsburgh, and the U.S. at large.

Introduction

- The overall cure rate of HNC is 50%, and early detection and treatment of disease is associated with significantly higher cure rates - 90% of Stage I and 75% for Stage II¹. As such, early detection remains the foundation for complete cure and remission of head and neck cancers.
- Despite early detection being the key to early intervention and cure for HNC, Black Americans have a higher age-adjusted incidence rate and often present with advanced disease^{2,1}. Additionally, they demonstrate a significantly higher rate of mortality, as early as within 90 days of treatment, even after adjustments for age, stage, primary tumor site, HPV status, and treatment type³. Similarly, the HNC 5-year survival rate among Black Americans is low as compared to other racial groups⁴.
- Race is an independent risk factor for HNC mortality, with a multidimensional etiology, rather than a mere reflection of socioeconomic differences, as previously presumed. **Therefore, to achieve health equity amongst HNC patients, the underlying reasons for this racial disparity must be elucidated.**
- Black residents in Pittsburgh, PA are more likely to die from tobacco-related deaths and cancer compared to their counterparts both within the city and compared to other cities.
- Therefore, Pittsburgh serves as an ideal site for modeling a robust intervention model. This is the first study of its kind among Pittsburgh area dwellers that aims to dive deeper in understanding the underlying contributors to HNC disparities among Black Americans exclusively.

Background



Objectives

- To assess the baseline knowledge of risk factors, signs and symptoms, and screening recommendations among Black Americans population in Pittsburgh.
- To educate our participants on HNC using an intervention tool - a short video that provides education on risk factors, signs and symptoms, and screening recommendations.

Hypothesis

- We hypothesize that knowledge of HNC and risk perception, will be low as compared to the general population. We hope that the data from this study will provide the foundation for future studies to assess the tool's impact, or lack thereof, on risk behavior modification and thus clarify multiple intervention targets for reducing this disparity.

Study Design

- Approval was sought and obtained from the University of Pittsburgh School of Medicine from the Institutional Review Board (IRB).
- Participants are being actively recruited from the Pittsburgh, PA area and surrounding environs.
- Surveys are being distributed exclusively online via Pitt+Me (research participant registry) and other online forums. Participants will be paid \$20 as a token of appreciation.
- Intervention: 13-min Patient education YouTube video was created by study authors.
- Target participant composition = 80% Black Americans and 20% other races.
- All participants will fill out a pre-intervention survey, watch a 13-minute intervention video and fill out a post-intervention. Final study method differs from initially designed method in abstract.

All Participants



Pre-Intervention Survey

Intervention

Post-Intervention Survey

Survey



Intervention

Patient Education Video



Please Check out Patient Education Video ↑

Anticipated Results and Conclusion

- Study is in active recruitment with insufficient data for analysis.
- Preliminary results demonstrate an awareness of head and neck cancer however a lack of accurate knowledge on the risk factors and symptoms of head and neck cancer exists.
- Current data also shows a lack of awareness and knowledge of screening programs for head and neck cancer and the appropriate specialty to seek treatment from.
- Intentional community engagement and awareness programs are needed from the Head and Neck Cancer surgery community to close the educational gap on head and neck cancer.

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References

- Goodwin WJ et al. (2008). *Unequal burden of head and neck cancer in the United States*.
- Daraei, P., & Moore, C. E. (2015). Racial Disparity Among the Head and Neck Cancer Population. *Journal of Cancer Education*, 30(3), 546–551. <https://doi.org/10.1007/s13187-014-0753-4>
- Gaubatz, M. E., Bukatko, A. R., Simpson, M. C., Polednik, K. M., Adjei Boakye, E., Varvares, M. A., & Osazuwa-Peters, N. (2019). Racial and socioeconomic disparities associated with 90-day mortality among patients with head and neck cancer in the United States. *Oral Oncology*, 89, 95–101. <https://doi.org/10.1016/j.oraloncology.2018.12.023>
- Daraei, P., & Moore, C. E. (2015). Racial Disparity Among the Head and Neck Cancer Population. *Journal of Cancer Education*, 30(3), 546–551. <https://doi.org/10.1007/s13187-014-0753-4>