Introduction

• Project 1. Breast cancer subtypes are typically categorized based on immunohistochemistry according to ER, PR, and HER2. Treatments targeting these receptor pathways have improved breast cancer outcomes, but survival differences still exist by subtype; e.g. 5-year survival > 75% for triple negative breast cancer vs. ~95% for ER/PR+HER2- tumors

Aim: The meta-analysis seeks to evaluate risk factors for triple negative breast cancer by asking if the known breast cancer risk factors are also associated with TNBC in adult females.

• Project 2. Endometrial cancer is one of the most common cancers in U.S. women. Substantial racial disparities have been found in diagnosis and outcome between Black and White women.

Aim: To expand our understanding of risk factors, epidemiology, and reasons for disparities in EC.

Methods and Materials

• Project 1: (see flowchart 1) Conducting screenings for texts on Rayyan based on inclusion and exclusion criteria; find appropriate tool for risk of bias assessment [Newcastle-Ottawa] and extract data from articles using pre-defined template.

Flowchart 1: Process of Identifying and Selecting studies for Systematic Reviews and Meta Analyses

- Include studies if: 
  - type of study = RCT or non-RCT
  - language = English

- Exclude studies if: 
  - type of study: narrative review, case series, case reports, conference abstracts

- Review full text articles to determine eligibility

- Update inclusion and exclusion criteria based on the study results

- Update the search strategy based on the study results

- Full text articles included (n = 490)
- Full text articles excluded (n = 185)
- Peer review excluded (n = 0)
- Non-English excluded (n = 0)
- Other (n = 0)

Results

Project 1: Among the several exposures included in our study, as compared to all breast cancers:

• Age: TNBC occurs in younger women more often
• Race: Black women are at greater risk
• Adiposity: Inconsistent findings on the relationship between adiposity and TNBC, particularly with respect to menopause status.
• Younger age at live birth are associated with higher risk of TNBC

Project 2: Substantial racial disparities in endometrial cancer exist: in 2018, an estimated 5-year relative survival was recorded of 84% in White women and 62% in Black women. Increased incidence of tumors in advanced stages, less use of surgery, and high-grade result in these disparities against Black women.

Figure 1: incidence rates, 2013-2017, by race and ethnicity, for uterine corpus

Figure 2: Death rates, 2014-2018, by race and ethnicity, for uterine corpus

Conclusions

• Project 1: This ongoing study will add to the existing evidence on reproductive and lifestyle factors as they relate to TNBC, as well as review the evidence for breast density as it relates to TNBC.
• Project 2: Studies have shown that Black women are less likely to go through operative management even though intensified surgical and radiation treatment are linked to improved survival. Our work will expand into a) understanding how certain influences interact and create barriers that cause such racial inequities in healthcare, and b) creating tools by which women can learn more about prevention.

What's Next?

• I will continue to participate in the projects beyond this summer.
• As per the timelines, both projects are expected to be proceeding to their next steps in Fall 2021. Project 1 will be moving to the data analysis stage and Project 2 will be receiving its study cohort data.

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References
