

Thesis Project Portfolio

Exploring the Etiology of Pelvic Organ Prolapse with Finite Element Analysis

(Technical Report)

Evaluating the Social Factors that Influence Government

Funding of Women's Health Research

(STS Research Paper)

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Sociotechnical Synthesis

Pelvic organ prolapse (POP) is the herniation of pelvic organs into the vaginal wall, occurring in 41% of post-menopausal women. Despite the widespread burden of POP, treatment options have excessively high failure rates. To improve POP treatment options, it is important to better understand where support reinforcement is necessary to correct the prolapse, requiring investigation of the biomechanical changes that cause POP. To advance this understanding, I constructed a computational model of the female pelvic floor to identify the support failures most influential in POP pathology.

It is evident that large research gaps exist in the understanding of POP, perpetuating ineffective treatment options for prolapse and leaving millions of women with physical and emotional distress as a result of prolapse. However, this issue speaks to a much larger systemic health care crisis pertaining to the awareness and investment in women's health research. Despite efforts to broaden awareness and resource allocation towards women's health, research beyond reproduction remains underfunded.

In order to reform the allocation of research expenditures regarding women's health, it is first important to understand the factors most influential in forming research budgets. Rachel Kahn Best's study, *Common Enemies: Disease Campaigns in America*, delineates the complex factors that are predictive of widespread disease advocacy.

To assess how these factors have shaped women's health research funding, I analyzed the National Institutes of Health Office of Research on Women's Health (ORWH) Biennial Report of the Advisory Committee on Research on Women's Health for the fiscal years 2015 to 2020. I used thematic coding and an analysis of the budget allocation towards specific women's health conditions to identify the priorities of the organization during the reported fiscal years. This data was compared to the World Health Organization's quantifications of disease burdens to observe discrepancies between the ORWH funding for each condition and the condition's relative burden on women. Using Best's framework, it was evident that disease funding was most significantly influenced by disease campaigns that rely upon the prevention of a disease that has the potential/perception of a universal benefit or benefit to a worthy group, have a specific disease target, and address a disease that raises minimal controversy.

The analysis of women's health government-initiated research funding will provide insight into the priorities and influences of these agencies. By identifying the trends in resource allocation, campaigns can be designed to effectively shift efforts towards under-researched areas of women's health, such as POP. Doing so would enable increased resources and development of sophisticated research methods to better understand fundamental women's health biomechanics.