

# “Epidemiology of Surgically Managed Pelvic Organ Prolapse and Urinary Incontinence” (1997), by Ambre L. Olsen, Virginia J. Smith, John O. Bergstrom, Joyce C. Colling, and Amanda L. Clark

In 1997, physicians and researchers Ambre Olsen, Virginia Smith, John Bergstrom, Joyce Colling, and Amanda Clark published, “Epidemiology of Surgically Managed Pelvic Organ Prolapse and Urinary Incontinence,” in the journal *Obstetrics and Gynecology*. In their article, the authors retrospectively analyzed data from patients who underwent surgery for pelvic organ prolapse or urinary incontinence two years prior in 1995. Often due to a weakening of or damage to their pelvic muscles, women with pelvic organ prolapse can experience a descent of pelvic organs into the lower pelvis and vagina. People with urinary incontinence can experience bladder control issues and urinary leaks. According to the authors, an estimated fifty percent of women who have previously given birth have had a prolapse. In their article, Olsen and colleagues analyze factors such as race, age, and weight in women who had surgery to treat pelvic organ prolapse and ultimately advocate for a standard assessment for the severity of those conditions.

At the time of publication, Olsen and colleagues collaborated at Oregon Health Sciences University in Portland, Oregon. They worked as physicians and researchers in the department of obstetrics and gynecology, where they specialized in the study of the female reproductive system. Many of the authors collaborated on different articles following the publication of “Epidemiology of Surgically Managed Pelvic Organ Prolapse,” focusing on topics such as determining the clinical severity of symptoms and understanding why some women require an additional operation to correct their prolapse years after the first operation.

The authors of “Epidemiology of Surgically Managed Pelvic Organ Prolapse” split their article into three sections preceded by an untitled introduction. In the introduction, Olsen and colleagues describe pelvic organ prolapse and urinary incontinence, including the estimated rate of surgical treatment and known risk factors for those conditions. In their methods section, the authors detail how their retrospective use of data collected two years prior enabled them to reconsider why certain surgical cases failed and others were successful. In their results section, the authors note that many women had repeat surgeries, suggesting a possible point of uncertainty in the pelvic organ prolapse grading scale. In the discussion, Olsen and colleagues explain why their results can be generalized and applied to the general population and describe potential future research on the long-term effectiveness of surgery as a treatment for pelvic organ prolapse and urinary incontinence. They also suggest standardizing the assessment and terminology used to describe those conditions to more accurately diagnose women and prevent repeat surgeries.

Olsen and colleagues begin their article by giving a brief overview of both pelvic organ prolapse and urinary incontinence. In the introduction, the authors state that an estimated fifty percent of women who have previously given birth have experienced a prolapse. They state the occurrence is most likely due to a loss of pelvic floor support, due to a straining of the pelvic floor muscles, and that many of the affected women sought treatment for their symptoms related to pelvic organ prolapse and urinary incontinence. The pelvic floor is a group of muscles that supports the organs in a woman’s pelvis, such as her bladder and uterus. If the pelvic floor is damaged or weakened, the pelvic organs that are normally fixed into place within the pelvic cavity can move down toward the woman’s vaginal opening. The resulting condition is called a prolapse, or more specifically, a

pelvic organ prolapse. Urinary continence, or the loss of bladder control, is often associated with pelvic organ prolapse. The authors then describe the treatment options for pelvic organ prolapse and urinary incontinence, focusing on the surgical repair of the pelvic floor to provide support. They explain the goal of their study was to determine the number of cases of pelvic organ prolapse and urinary incontinence in a group of women that they suggest represented the general population.

In the methods section, the authors describe the women included in their study. Olsen and colleagues state that their paper was based on data previously collected by the Kaiser Permanente Northwest organization in Portland, Oregon. They explain that the data, collected in 1995, included surgical histories and outcomes from women whose medical records had been consistently collected in the same uniform fashion. Additionally, the data was standardized for factors such as race, age, and medical history, which Olsen and colleagues assert made the data representative of the population local to Portland. The authors narrowed their study to include only those women who received surgical intervention for pelvic organ prolapse and urinary incontinence at Kaiser in 1995. In their study, Olsen and colleagues measured factors such as age, race, height, weight, and number of times the women gave birth to examine if there were trends between those factors and the number of cases of pelvic organ prolapse and urinary incontinence. The authors note that they considered the ages of the women when analyzing the data.

Also in, "Materials and Methods," Olsen, Smith, Bergstrom, Colling, and Clark describe the parameters they used to narrow the data. They first determined the number of women who received surgical cases to treat pelvic organ prolapse and urinary incontinence, specified by age. To assess prolapse severity, the authors assigned and separated the terms used by physicians to describe a woman's prolapse, thereby categorizing at a specific and standardized grade. They then divided the analyzed surgeries into three treatment categories, pelvic organ prolapse, urinary incontinence, or both. They also considered repeat surgeries, the time between those surgeries, and what that meant for the successes of the initial surgeries. The authors state that they classified their population by condition and surgical outcome to note the number of women undergoing surgery for either condition and how effective surgery was in managing their condition.

In the results section, the authors describe that the annual rate of surgery to treat pelvic organ prolapse and urinary incontinence was higher for older women. They also found that the risk a woman had of undergoing at least one operation to treat those conditions over her lifetime was about eleven percent. The authors found that women who underwent surgery to only treat urinary incontinence were younger, more obese, and more likely to have chronic lung disease than the women who only had surgery to treat pelvic organ prolapse. Olsen and colleagues admit that the physicians' descriptions of pelvic floor support were initially variable. However, the authors found that, by using their new classification, physicians would have assigned most of the women in their study with a moderate prolapse. According to Mayo Clinic, a woman with a moderate prolapse often experiences symptoms that interfere with her daily life. Olsen and colleagues then compared the number of repeat operations with first operations and found that over twenty-nine percent of women in their study had to undergo repeat procedures. That suggests that, for many women, their initial procedures did not effectively resolve the prolapse. In addition, those first surgeries may have also caused additional prolapses. The authors note that the time between operations decreased between each of the following repairs, meaning that the long-term success decreased with each additional surgery.

In the discussion section, Olsen, Smith, Bergstrom, Colling, and Clark describe the results of their study in terms of its application to the local population. They begin by describing the known incidence of pelvic floor dysfunction and surgical management, stating that many women are asymptomatic, meaning that they do not experience any symptoms. As a result, those women often do not seek out surgical intervention, and thereby, the incidence of surgery underestimates the incidence of asymptomatic pelvic floor dysfunction. The authors explain that some women cannot receive surgery due to limited healthcare access and lower financial capabilities to pay for medical care. Therefore, they state that their results may not represent women who may not be able to access surgery for reasons outside of their control. Olsen and colleagues describe why other researchers may be able to apply their results to a population representative of similar demographics. They restate that their study group was representative of the relative age, socioeconomic status, ethnicity,

and gender among women local to Portland. They mention that their findings may not accurately represent minority populations because the women in their study were predominately white.

Also in their discussion, the authors describe that trends differed between women who underwent surgery for either pelvic organ prolapse or urinary incontinence based on age, weight, and risk factors. The authors state that the difference in population characteristics between women affected by pelvic organ prolapse and urinary incontinence could suggest that the conditions have different causes. While the two conditions share similar causes like vaginal childbirth and pregnancy, Olsen and colleagues indicate that investigating additional causes had potential for a future study. The authors explain that across both surgical treatments, many women had to have repeat surgeries for both, indicating a high rate of surgical failure. The fact that surgeries were not initially successful in treating the prolapse, or resulted in reoccurring prolapse, shows that the surgical methods were not effective. The authors suggest further research into the development of more effective surgery techniques to lessen the need for repeated surgeries.

Olsen and colleagues then propose potential explanations for the rates of surgical failure and propose future studies. The authors explain that their data uncovered a lack of consistent descriptions among physicians for categorizing and explain the overall severity of the pelvic floor dysfunction. The authors state that the lack of a standard and equal system for description could result in a misdiagnosis on the severity of the woman's prolapse. That means that a physician may not have treated a woman's prolapse entirely if the physician did not treat the prolapse aggressively enough. They state that may explain why many of the surgeries were not successful. The authors state that other researchers should consider investigating the long-term effectiveness of surgery to treat pelvic floor disorders, such as pelvic organ prolapse and urinary incontinence. They suggest that developing a standard of terms and assessments to describe symptoms, pelvic support, and pelvic floor function would be useful.

Other researchers studying similar female reproductive disorders have cited Olsen and colleagues' article "Epidemiology of Surgically Managed Pelvic Organ Prolapse" over 3600 times as of 2021. Many of those researchers built upon the premise suggested by the authors for more standardized assessments of pelvic organ prolapse. As of 2021, several systems standardize the assessment of pelvic organ prolapse, including the Pelvic Organ Prolapse Quantification System, also known as POP-Q. Medical societies such as the International Continence Society and the American Urogynecological Society have referenced the use of the POP-Q system as a potential means for effective scoring and grading of pelvic organ prolapse.

Olsen and colleagues' article estimated the number of women treated for pelvic organ prolapse and urinary incontinence with surgery at the time of the article's publication, and worked to understand why some treatments failed. Their article was one of the first to note trends between the characteristics of women in the population, such as race and weight, and the rate of surgical treatment for the conditions. Not only did they identify a hindrance in surgical effectiveness based off of an unstandardized scoring system, Olsen and colleagues also encouraged further research into the long-term effectiveness of surgical treatment for both pelvic organ prolapse and urinary incontinence.

## Sources

1. Denman, Mary Anna, W. Thomas Gregory, Sarah H. Boyles, Virginia Smith, S. Renee Edwards, and Amanda L. Clark. "Reoperation 10 Years After Surgically Managed Pelvic Organ Prolapse and Urinary Incontinence." *American Journal of Obstetrics and Gynecology* 198 (2008): 555.
2. Ghetti, Chiara, W. Thomas Gregory, S. Renee Edwards, Lesley N. Otto, and Amanda L. Clark. "Pelvic Organ Descent and Symptoms of Pelvic Floor Disorders." *American Journal of Obstetrics and Gynecology* 193 (2005): 53-7.
3. Maher, Christopher, Benjamin Feiner, Kaven Baessler, and Corina Schmid. "Surgical Management of Pelvic Organ Prolapse in Women." *Cochrane Database of Systematic Reviews* 4 (2013). <https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD004014.pub5/full> (Accessed March 17, 2020).

4. "Menopause, Perimenopause, and Postmenopause." Cleveland Clinic. <https://my.clevelandclinic.org/health/diseases/15224-menopause-perimenopause-and-postmenopause> (Accessed March 17, 2020).
5. Olsen, Ambre L., Virginia J. Smith, John O. Bergstrom, Joyce C. Colling, and Amanda L. Clark. "Epidemiology of Surgically Managed Pelvic Organ Prolapse and Urinary Incontinence." *Obstetrics & Gynecology* 89 (1997): 501-6.
6. "Pelvic Floor Dysfunction." Cleveland Clinic. <https://my.clevelandclinic.org/health/diseases/14459-pelvic-floor-dysfunction> (Accessed March 17, 2020).
7. "Pelvic Organ Prolapse." Office on Women's Health, US Department of Health and Health Services. <https://www.womenshealth.gov/a-z-topics/pelvic-organ-prolapse> (Accessed March 17, 2020).
8. Persu, Cristian, Christopher R. Chapple, Victor Cauni, Stefan Gutue, and Petrisor Geavlete. "Pelvic Organ Prolapse Quantification System (POP-Q)-a New Era in Pelvic Prolapse Staging." *Journal of Medicine and Life* 4 (2011) 75-81. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3056425/> (Accessed March 17, 2020).
9. "Urinary Incontinence." Mayo Clinic, Mayo Foundation for Medical Education and Research. <https://www.mayoclinic.org/diseases-conditions/urinary-incontinence/symptoms-causes/syc-20352808> (Accessed March 17, 2020).
10. "Uterine Prolapse." Mayo Clinic, Mayo Foundation for Medical Education and Research. <https://www.mayoclinic.org/diseases-conditions/uterine-prolapse/symptoms-causes/syc-20353458> (Accessed March 17, 2020).