

**Title:** Bowel Symptoms Affect Quality of Life in Women with Pelvic Organ Prolapse

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**Objective:** To determine if leading edge of pelvic organ prolapse is associated with bowel symptoms, distress, and quality of life.

**Methods:** 336 women with  $\geq$  stage I prolapse were enrolled in this cross-sectional study. Subjects completed the Pelvic Floor Distress Inventory (PFDI) and the Pelvic Floor Impact Questionnaire (PFIQ) prior to evaluation. Bowel symptom presence and bother was assessed using the Colorectal-Anal Distress Inventory (CRADI) subscale of the PFDI. Bowel symptom impact on quality of life was measured with the Colorectal-Anal Impact Questionnaire (CRAIQ) subscale of the PFIQ. Prolapse was evaluated with the Pelvic Organ Prolapse Quantification (POPQ) examination. Multivariable linear regression models were developed to estimate the effect of factors on leading edge of prolapse. Polytomous logistic regression modeling was used to estimate the factors that raised the CRADI and CRAIQ total scores.

**Results:** The study population had a mean age of  $62 \pm 13$  years and was predominantly Caucasian (91%). Three women had stage I prolapse (<1%), 129 (38.4%) stage II prolapse, 176 (52.4%) stage III prolapse, and 27 (8.3%) stage IV prolapse. The predominant compartment of prolapse was anterior or apical in 277 women, while 41 (13%; n = 18 missing values) women had posterior-predominant prolapse. Bowel symptoms, as measured by CRADI total and subscale scores, and bowel-related quality of life scores, as measured by CRAIQ total and subscale scores, did not change as prolapse progressed by POPQ stage. When compared to women with anterior or apical-

predominant prolapse, women with posterior-predominant prolapse reported significantly higher CRAIQ total and subscale scores ( $p < 0.05$ ). Multivariable linear regression showed that an increase in the CRADI was associated with an increase in the leading edge of prolapse (100 point increase in CRADI associated with a 1.0 cm increase in the leading edge of prolapse) after adjusting for age. When a multivariable linear regression model was developed for participants with posterior-predominant prolapse, only age ( $\beta = .36, P = 0.01$ ) and history of a prior incontinence procedure ( $\beta = -.24, P = 0.005$ ) were significantly associated with leading edge of prolapse. Polytomous logistic regression demonstrated that prior hysterectomy (OR = 3.6 to 6.4;  $P < 0.008$ ) was a significant predictor of higher total CRADI and CRAIQ scores. Prior incontinence procedure was associated with higher CRAIQ scores (RR = 2.6 to 5.4;  $P < 0.04$ ).

**Conclusion:** Bothersome bowel symptoms that negatively impact a woman's quality of life may occur with any amount of prolapse and more severe symptoms may be related to the extent of prolapse. Prior hysterectomy appears to have the largest influence on bowel symptom scores and quality of life scores.