Project Title: Patient Centered Outcomes & Uptake of Health System Portal Use in Chronic Kidney Disease

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Branch: Systems Focused & Hospital-Based Practice

Path of Excellence: Patient Safety/ Quality Improvement/ Complex Systems

If this project can be continued by another UMMS student, please include your contact information or any other details you would like to share here: n/a

Summary:
Web-based resources for chronic kidney disease (CKD) care and education are increasingly emphasized. We examined if patient use of a specific web-based resource (patient portal) was associated with patient CKD knowledge, perceived CKD-specific stress, and patient self-ratings of health.

Methodology:
A cross sectional survey was administered to adult patients with non-dialysis CKD during nephrology follow up visits (April 2015-March 2018). Logistic regression was used to examine the association between patient electronic health record portal use (outcome) and demographics, eGFR, patient CKD knowledge, perceived CKD-stress, and patient self-ratings of health assessed using validated questionnaires.

Results:
Of 245 participants, the mean age was 60 (SD $\pm$ 17) years. Eighty percent were white, 51% women, 94% had > 8th grade formal education, and 40% had <$50,000 annual income. Sixty-seven percent used the portal, with 99% using it to check lab results, 82% to send messages to providers, 62% to review or renew prescriptions, 84% to make or change clinic appointments, 81% to view their medical history, and 72% to check information including patient educational resources. African Americans (odds ratio [OR] 0.39; 95% confidence interval [CI] 0.18-0.83 vs. white patients), those with less formal education (OR 0.06; CI 0.00-0.34), and lower income (OR 0.28; CI 0.13-0.61 for those making less than $25,000 annually and 0.25; CI 0.12-0.52 $25-50,000 annually compared to >$50,000) were less likely to use the portal. Patients with lower CKD knowledge (OR 0.98; CI 1.00-1.04) as well as those with higher perceived CKD-stress (OR 0.62; CI 0.40-0.94) were more likely to use the portal. In the multivariable analysis, higher perceived CKD-stress (OR 0.54; CI 0.31-0.93) and lower income (OR 0.32; CI 0.12-0.78) for those making less than $25,000 annually and 0.26; CI 0.11-0.58 $25-50,000 compared to >$50,000) remained associated with a lower likelihood to use the portal.

Conclusion:
Patient health portals are less likely to be used by patients of lower income and those with more kidney disease specific stress. With an increasing emphasis on the use of health portals to improve patient engagement, interventions are needed to address disparities between portal users and non-users and ensure that promotion of patient portals does not widen gaps in support for those patients who may need it most.

Reflection/Impact Statement:
You may use the following questions to guide your reflection:
1. How did the process of conducting this research confront any limitations of your prior thinking?
2. Who could potentially benefit from this CFI project over different timescales and how?
3. What actions will you take afterwards to continue the momentum of this project, and maximise the likelihood of the identified benefits being achieved?
4. What advice would you give to another student completeing their CFI?

Conducting this research allowed me to work in a multidisciplinary team with a faculty mentor, nephrology fellow, and statistician. I learned about quality improvement concepts while completing this capstone project, refined my troubleshooting abilities, and improved my data analysis/ statistical skills.