Symptom Characterization in Late Stage Chronic Kidney Disease

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Purpose: Chronic kidney disease (CKD) is a global health concern,8 with symptom burdens that rival that of cancer. Little is known, however, about symptoms and the association with patient level factors and outcomes in CKD. The purpose of this presentation, therefore, is to characterize the symptom experience across CKD stages 3-5 and to examine associations with patient-level factors including health status and hospitalizations.

Methods: A physiological conceptual framework based on the pathophysiology of CKD and its symptoms guided the study development and methodology. A secondary data analysis of 195 late stage CKD patients was conducted. Four datasets from two major Northeastern United States cities were combined to create the sample for these analyses. Descriptive analyses for demographic and clinical characteristics at baseline were conducted. Participant characteristics were compared across the predicted latent class analysis (LCA) symptom classes using chi-square tests and analysis of variance (ANOVA) for categorical and continuous markers, respectively. The baseline Palliative Outcome Scores are reported among each class using a non-parametric Kruskal-Wallis tests to examine differences in the median and interquartile ranges of symptom distress subscale scores between symptom classes. Statistically significant differences among the two groups were further evaluated by post-hoc comparison of sub-groups using a Bonferroni correction for the three tests (p=0.05/3=0.0125). All point estimates were generated with 95% confidence intervals at a significance level of less than 0.05. STATA (version 14) was used for all analyses.

Results: The sample was overwhelmingly African American, male, and diagnosed with stages 4 or 5 CKD. Hypertension and diabetes the primary etiologies of kidney disease. Pain, weakness, and insomnia are the most commonly reported symptoms. Patients in the "high" or "all" reported symptom classes were more likely to

be hospitalized, with longer lengths of stay in comparison so the "low" reported symptom class.

Conclusion: There were several limitations to the study, the least of which are that this was a secondary data analysis, with cross-section with minimal follow up and outcomes data. This notwithstanding however, the implications of symptom assessment in the setting of the need for hospitalization, has the potential to revolutionize CKD symptom assessment and management. A larger scale RCT is necessary to explore clinical relevance of symptoms identified. Further prospective, longitudinal analyses with larger samples are necessary to begin to develop interventions to improve the patient symptom experience.

Title:
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Keywords:
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Abstract Summary:
Chronic Kidney Disease (CKD) is a global health concern, with symptom burdens that rival cancer. Little is known about symptoms and outcomes in CKD. The purpose of this presentation, therefore, is to characterize the symptom experience across CKD stages 3-5 and examine associations with factors including health status, and hospitalizations.

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Author Summary: Dr. Clark-Cutaia is interested in symptom prevalence, science and management; outcomes morbidity, and mortality in chronic illness, specifically, hypertension, diabetes, chronic kidney disease, and patients undergoing hemodialysis. She has developed an interdisciplinary program of research focused on the biological basis and symptom management of adults with chronic illness. Her clinical experience in both the civilian and military sectors have influenced her program of scientific inquiry.

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Author Summary: Dr. Rivera is an experienced researcher and a postdoctoral fellow at the University of Pennsylvania. Her fellowship is under the direction of Dr. Mary Naylor (T32NR009356-11), focused on the health and well-being of older adults. She is currently conducting research focusing on characterization of factors influencing treatment adherence in chronic kidney disease. In particular, Dr. Rivera is evaluating the effect of a person's perception of their chronic condition progression on health outcomes.

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Author Summary: Gavin Arneson is an undergraduate student at New York University studying nursing and global public health. This is his second year serving as a research assistant at the College of Nursing, and his third year carrying out research. Gavin is particularly interested in health systems design and management, and he hopes to connect his background in clinical nursing research to the development of health policy that is equitable, just, and patient-centered.

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