

Under Recognition and Documentation of Hemodialysis Patient Symptoms

Patients on maintenance hemodialysis experience a high symptom burden, yet it is unclear whether symptoms are recognized and included into provider documentation. We surveyed patients aged ≥ 18 from an OP HD unit who received thrice weekly maintenance HD treatments. At the end of every treatment for 4 weeks, we surveyed to assess the presence of 21 symptoms. Surveys were also administered after every treatment to nurses and once during the study period to physicians. 2 researchers developed a dictionary of terms and synonyms for the six most frequent symptoms. We used spaCy libraries and pipelining in Python to parse provider notes. 97 patients who participated in the study. Top 6 symptoms experienced by patients were fatigue (60.8%), cramping (58.8%), dry skin (52.6%), muscle soreness (43.3%), itching (41.2%), and intradialytic hypotension (35.1%). Of the 6 symptoms with the highest patient-reported prevalence, nurses under-recognized 5/6 by a mean relative difference of $69.5 \pm 25.5\%$, and physicians under-recognized 6/6 by a mean relative difference of $51.5 \pm 17.0\%$. Medical documentation of these symptoms proved even more scarce, with all 6 symptoms being under-reported as identified by natural language processing (NLP) by a mean relative difference of $83.5 \pm 14.6\%$.