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Title

PROMIS Mental Health and Physical Health summary scores in patients on kidney replacement therapies

Objective

PROMIS profiles include multiple health-related quality of life domains and higher-order summary scores. We assessed the construct validity of the PROMIS physical (PH) and mental health (MH) summary scores among patients treated with dialysis or kidney transplant.

Methods

A cross-sectional convenience sample of adults treated with kidney transplant or dialysis completed the PROMIS29 2.0 or CATs using electronic data capture. Participants also completed a sociodemographic questionnaire and “legacy” questionnaires (Patient Health Questionnaire-9 [PHQ9], Medical Outcomes Study Short Form-12 [SF-12] and the EQ-5D-5L). The SF6D utility score was calculated from SF-12 item scores. Clinical data were extracted from medical records. Convergent validity was assessed using Pearson correlation between MH score vs PHQ9 and SF12 mental component summary (MCS); between PH score vs serum albumin and SF12 physical component summary (PCS). We assessed correlations between MH and PH summary scores and EQ5D-5L and SF-6D health utility scores. Furthermore, we compared the summary scores between groups expected to have different PH and MH based on prior literature or clinical knowledge: dialysis vs kidney transplant; anemia vs no anemia (Hb 125); high vs low comorbidity (Charlson comorbidity index [CCI] 3); no/mild vs moderate/severe depressive symptoms (PHQ9 10).



Results

Of the 602 participants, mean (SD) age was 58(17) years, 59% male and 45% White; 48% had received a kidney transplant. The mean(SD) PH and MH T-score was 42(11) and 49(10), respectively. Our analysis yielded correlations in the expected directions. For PH: PCS($r=0.81$), serum albumin ($r=0.37$); for MH: PHQ9($r=-0.74$) and MCS($r=0.65$). Both PH and MH scores correlated with the EQ5D-5L ($r=0.65$ and 0.61 , respectively) and with the SF-6D (0.78 and 0.79 , respectively). Both PH and MH scores were higher among kidney transplant recipients than patients on dialysis (48(10) vs 37(9); 51(9) vs 47(10), respectively; $p<0.001$). The expected differences (>5 point for each comparisons) were seen for the additional “known group” comparisons

Conclusions

These results support the validity of PROMIS PH and MH scores among patients treated with kidney replacement therapies. These summary scores may be useful to monitor health-related quality of life in research and clinical settings

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