

**The Missing Piece:  
Assessing Determinants of Prolonged Hospital Stay and Readmissions in Patients with  
Parkinson's Disease**

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**Background:** Parkinson's Disease (PD) is the second most common neurodegenerative disease in the U.S. Patients with PD experience more and prolonged hospitalizations compared to age-related peers. There is limited literature on the association between social determinants of health (SDOH), readmissions, and length of stay (LOS) in patients with PD. This study explored the social determinants of readmissions (RA), 30-day readmissions (30RA), and LOS among patients with PD.

**Methods:** This retrospective study analyzed an EPIC-generated dataset from SDOH screenings using the PRAPARE tool for inpatient admissions at three urban Northwest Indiana hospitals between January 2021-March 2025. Patients were identified using ICD-10. Data analysis involved bivariate (Chi-square, Mann Whitney U, Kruskal Wallis) and multivariate analyses (binary logistic and linear regressions) using SPSS 31.0 ( $p < 0.05$ ). This study was IRB exempt by Indiana University (IRB #14040).

### **Results**

The sample comprised 2,990 patients with PD, predominantly white (73.4%), male (61%), 75 and older (59.2%), and publicly insured (96%). 30RA bivariate analysis revealed race, sexual orientation, insurance type, housing risk, readmissions, LOS, and PD comorbidities as significant factors. Multivariate analysis revealed patients identifying as Black/African American had significantly higher odds (OR 3.96) of 30RA. RA bivariate analysis revealed race, language, social connections risk, hospital, and LOS were significant. Multivariate analysis revealed patients at hospital C had significantly lower odds of RA (OR 0.689). LOS bivariate analysis revealed language, veteran status, insurance type, family income, hospital, ED Disposition, PD comorbidities, and PD type were significant. Multivariate analysis revealed PD with dyskinesia ( $B=1.561$ ) was associated with longer LOS and both family income ( $B=-3.940 \times 10^{-5}$ ) and ED disposition-observation ( $B=-2.010$ ) with shorter LOS.

**Conclusion:** Socio-demographic and health-related factors influenced readmissions and LOS in patients with PD. Since prolonged hospitalization and readmissions can exacerbate motor symptoms in these patients, future research should examine SDOH and health-related factors exacerbating these symptoms.